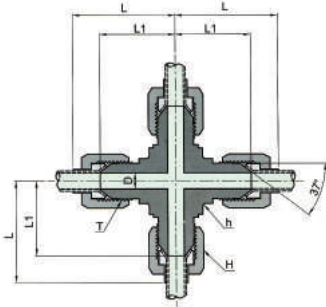


## FX

### Union Cross

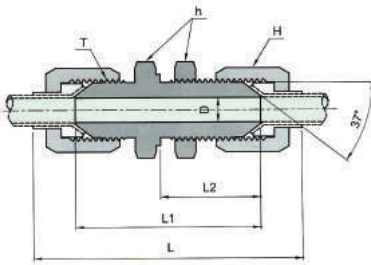


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>
FX-2T	1/8	3	5/16-24	1.6	11.1	9.5	27.4	19.6
FX-3T	3/16	4	3/8-24	3.2	11.1	11.1	30.5	21.1
FX-4T	1/4	6	7/16-20	4.4	11.1	14.3	31.7	22.6
FX-5T	5/16	8	1/2-20	6.0	14.3	15.9	34.5	24.1
FX-6T	3/8	10	9/16-18	7.5	14.3	17.5	38.8	26.9
FX-8T	1/2	12	3/4-16	9.9	19.0	22.2	44.5	31.8
FX-10T	5/8	16	7/8-14	12.3	22.2	22.2	53.4	36.8
FX-12T	3/4	18	1 1/16-12	15.5	27.0	31.8	57.7	42.2
FX-14T	7/8	22	1 3/16-12	18.3	33.3	34.9	63.3	45.7
FX-16T	1	25	1 5/16-12	21.4	33.3	38.1	65.0	46.0
FX-20T	1 1/4	32	1 5/8-12	27.4	41.3	50.8	70.8	52.3
FX-24T	1 1/2	38	1 7/8-12	33.3	47.6	57.2	85.9	59.2
FX-32T	2	50	2 1/2-12	45.2	63.5	73.0	105.2	77.7

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FBHU

### Bulkhead Union

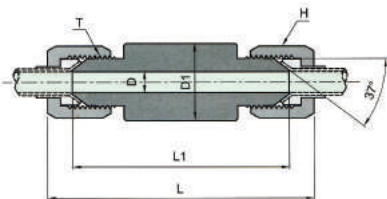


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FBHU-2T	1/8	3	5/16-24	1.6	14.3	9.5	63.1	47.5	28.2
FBHU-3T	3/16	4	3/8-24	3.2	15.9	11.1	67.1	48.3	28.2
FBHU-4T	1/4	6	7/16-20	4.4	17.5	14.3	70.8	52.6	30.5
FBHU-5T	5/16	8	1/2-20	6.0	19.1	15.9	73.4	52.6	30.5
FBHU-6T	3/8	10	9/16-18	7.5	20.6	17.5	79.2	55.4	32.5
FBHU-8T	1/2	12	3/4-16	9.9	25.4	22.2	87.4	62.0	36.6
FBHU-10T	5/8	16	7/8-14	12.3	28.6	22.2	102.8	69.6	40.1
FBHU-12T	3/4	18	1 1/16-12	15.5	34.9	31.8	109.5	78.5	44.4
FBHU-14T	7/8	22	1 3/16-12	18.3	38.1	34.9	114.4	79.2	44.4
FBHU-16T	1	25	1 5/16-12	21.4	41.3	38.1	117.8	79.8	44.4
FBHU-20T	1 1/4	32	1 5/8-12	27.4	47.6	50.8	121.1	84.1	45.7
FBHU-24T	1 1/2	38	1 7/8-12	33.3	54.0	57.2	142.8	89.4	46.0
FBHU-32T	2	50	2 1/2-12	45.2	69.9	73.0	161.7	106.7	53.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FBUW

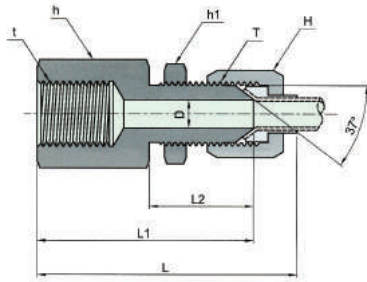
### Weld Bulkhead Union



Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	D <sub>1</sub>	H (HEX)	L	L <sub>1</sub>
FBUW-2T	1/8	3	5/16-24	1.6	11.0	9.5	85.6	70.0
FBUW-3T	3/16	4	3/8-24	3.2	11.0	11.1	88.8	70.0
FBUW-4T	1/4	6	7/16-20	4.4	14.0	14.3	98.2	80.0
FBUW-5T	5/16	8	1/2-20	6.0	16.0	15.9	120.8	100.0
FBUW-6T	3/8	10	9/16-18	7.5	17.0	17.5	123.8	100.0
FBUW-8T	1/2	12	3/4-16	9.9	22.0	22.2	125.4	100.0
FBUW-10T	5/8	16	7/8-14	12.3	25.0	22.2	143.2	110.0
FBUW-12T	3/4	18	1 1/16-12	15.5	30.0	31.8	151.0	120.0
FBUW-14T	7/8	22	1 3/16-12	18.3	32.0	34.9	165.0	130.0
FBUW-16T	1	25	1 5/16-12	21.4	40.0	38.1	168.0	130.0
FBUW-20T	1 1/4	32	1 5/8-12	27.4	46.0	50.8	177.0	140.0
FBUW-24T	1 1/2	38	1 7/8-12	33.3	50.0	57.2	193.4	140.0
FBUW-32T	2	50	2 1/2-12	45.2	70.0	73.0	205.0	150.0

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

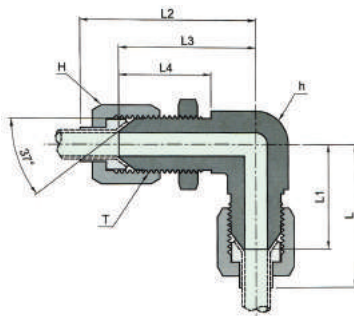
**FFBU**  
Female Bulkhead Union



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t(NPT)	D	h (HEX)	h1 (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FFBU2T-01N	1/8 3	5/16-24	1/8	1.6	14.3	14.3	9.5	49.0	41.2	28.2
FFBU3T-01N	3/16 4	3/8-24	1/8	3.2	14.3	15.9	11.1	50.6	41.2	28.2
FFBU4T-01N	1/4 6	7/16-20	1/8	4.4	14.3	17.5	14.3	52.6	43.5	30.5
FFBU5T-01N	5/16 8	1/2-20	1/8	6.0	14.3	19.1	15.9	53.9	43.5	30.5
FFBU6T-02N	3/8 10	9/16-18	1/4	7.5	19.1	20.6	17.5	62.5	50.5	32.5
FFBU8T-03N	1/2 12	3/4-16	3/8	9.9	22.2	25.4	22.2	69.3	56.6	36.6
FFBU10T-04N	5/8 16	7/8-14	1/2	12.3	28.6	28.6	22.2	82.7	66.1	40.1
FFBU12T-06N	3/4 18	1 1/16-12	3/4	15.5	34.9	34.9	31.8	86.0	71.4	44.4
FFBU14T-06N	7/8 22	1 3/16-12	3/4	18.3	34.9	38.1	34.9	89.0	71.4	44.4
FFBU16T-08N	1 25	1 5/16-12	1	21.4	41.3	41.3	38.1	94.4	75.4	44.4
FFBU20T-10N	1 1/4 32	1 5/8-12	1 1/4	27.4	50.8	47.6	50.8	99.2	80.7	45.7
FFBU24T-12N	1 1/2 38	1 7/8-12	1 1/2	33.3	60.3	54.0	57.2	107.7	81.0	46.0
FFBU32T-16N	2 50	2 1/2-12	2	45.2	73.0	69.9	73.0	120.6	93.1	53.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

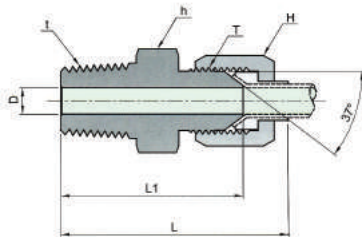
**FBUL**  
Bulkhead Union Elbow



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
FBUL-2T	1/8 3	5/16-24	11.1	9.5	30.2	22.4	45.9	38.1	23.4
FBUL-3T	3/16 4	3/8-24	11.1	11.1	33.3	23.9	47.5	38.1	23.4
FBUL-4T	1/4 6	7/16-20	11.1	14.3	33.7	24.6	49.5	40.4	25.9
FBUL-5T	5/16 8	1/2-20	14.3	15.9	37.3	26.9	54.1	43.7	25.9
FBUL-6T	3/8 10	9/16-18	14.3	17.5	39.6	27.7	57.9	46.0	27.7
FBUL-8T	1/2 12	3/4-16	19.0	22.2	47.2	34.5	66.3	53.6	31.8
FBUL-10T	5/8 16	7/8-14	22.2	22.2	56.2	39.6	77.3	60.7	35.8
FBUL-12T	3/4 18	1 1/16-12	27.0	31.8	60.7	45.2	83.1	67.6	39.6
FBUL-14T	7/8 22	1 3/16-12	33.3	34.9	66.4	48.8	88.7	71.1	39.6
FBUL-16T	1 25	1 5/16-12	33.3	38.1	68.3	49.3	90.1	71.1	39.6
FBUL-20T	1 1/4 32	1 5/8-12	41.3	50.8	73.6	55.1	97.7	79.2	40.9
FBUL-24T	1 1/2 38	1 7/8-12	47.6	57.2	86.1	59.4	113.6	86.9	41.1
FBUL-32T	2 50	2 1/2-12	63.5	73.0	100.9	73.4	131.9	104.4	48.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

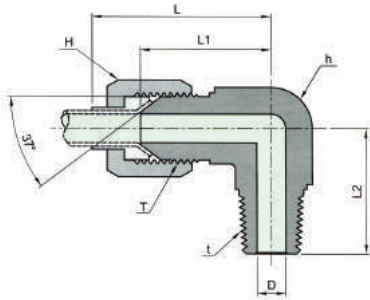
**FMC**  
Male Connector



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>
FMC2T-01N	1/8 3	5/16-24	1/8	1.6	11.1	9.5	36.0	28.2
FMC3T-01N	3/16 4	3/8-24	1/8	3.2	11.1	11.1	38.4	29.0
FMC4T-01N	1/4 6	7/16-20	1/8	4.4	12.7	14.3	40.1	31.0
FMC5T-01N	5/16 8	1/2-20	1/8	6.0	14.3	15.9	41.4	31.0
FMC6T-02N	3/8 10	9/16-18	1/4	7.5	15.9	17.5	48.2	36.3
FMC8T-03N	1/2 12	3/4-16	3/8	9.9	20.6	22.2	51.6	38.9
FMC0T-04N	5/8 16	7/8-14	1/2	12.3	23.8	22.2	64.6	48.0
FMC12T-06N	3/4 18	1 1/16-12	3/4	15.5	28.6	31.8	67.8	52.3
FMC14T-06N	7/8 22	1 3/16-12	3/4	18.3	31.8	34.9	70.7	53.1
FMC16T-08N	1 25	1 5/16-12	1	21.4	34.9	38.1	77.4	58.4
FMC20T-10N	1 1/4 32	1 5/8-12	1 1/4	27.4	42.9	50.8	80.7	62.2
FMC24T-12N	1 1/2 38	1 7/8-12	1 1/2	33.3	50.8	57.2	94.8	68.1
FMC32T-16N	2 50	2 1/2-12	2	45.2	66.7	73.0	106.5	79.0

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

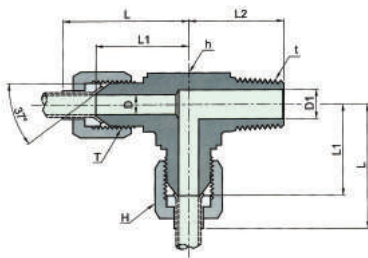
**FML**  
Male Elbow



Part Number	Tube O.D.		T (UNF/UN)	t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
	Inch	Metric								
FML2T-01N	1/8	3	5/16-24	1/8	1.6	11.1	9.5	27.4	19.6	18.3
FML3T-01N	3/16	4	3/8-24	1/8	3.2	11.1	11.1	30.5	21.1	18.3
FML4T-01N	1/4	6	7/16-20	1/8	4.4	11.1	14.3	31.7	22.6	19.8
FML5T-01N	5/16	8	1/2-20	1/8	6.0	14.3	15.9	34.5	24.1	19.8
FML6T-02N	3/8	10	9/16-18	1/4	7.5	14.3	17.5	38.8	26.9	27.7
FML8T-03N	1/2	12	3/4-16	3/8	9.9	19.0	22.2	44.5	31.8	31.0
FML10T-04N	5/8	16	7/8-14	1/2	12.3	22.2	22.2	53.4	36.8	37.3
FML12T-06N	3/4	18	1 1/16-12	3/4	15.5	27.0	31.8	57.7	42.2	40.4
FML14T-06N	7/8	22	1 3/16-12	3/4	18.3	33.3	34.9	63.3	45.7	42.9
FML16T-08N	1	25	1 5/16-12	1	21.4	33.3	38.1	65.0	46.0	50.0
FML20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	41.3	50.8	70.8	52.3	60.5
FML24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	47.6	57.2	85.9	59.2	67.1
FML32T-16N	2	50	2 1/2-12	2	45.2	63.5	73.0	105.2	77.7	76.2

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

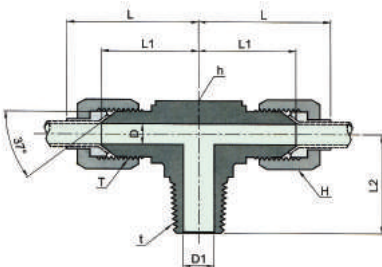
**FMRT**  
Male Run Tee



Part Number	Tube O.D.		T (UNF/UN)	t(NPT)	D	D <sub>1</sub>	h <sub>1</sub> (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
	Inch	Metric									
FMRT2T-01N	1/8	3	5/16-24	1/8	1.6	4.8	11.1	9.5	27.4	19.6	18.3
FMRT3T-01N	3/16	4	3/8-24	1/8	3.2	4.8	11.1	11.1	30.5	21.1	18.3
FMRT4T-01N	1/4	6	7/16-20	1/8	4.4	4.8	11.1	14.3	31.7	22.6	19.8
FMRT5T-01N	5/16	8	1/2-20	1/8	6.0	4.8	14.3	15.9	34.5	24.1	19.8
FMRT6T-02N	3/8	10	9/16-18	1/4	7.5	7.0	14.3	17.5	38.8	26.9	27.7
FMRT8T-03N	1/2	12	3/4-16	3/8	9.9	10.3	19.0	22.2	44.5	31.8	31.0
FMRT10T-04N	5/8	16	7/8-14	1/2	12.3	13.5	22.0	22.2	53.4	36.8	37.3
FMRT12T-06N	3/4	18	1 1/16-12	3/4	15.5	18.3	27.0	31.8	57.7	42.2	40.4
FMRT14T-06N	7/8	22	1 3/16-12	3/4	18.3	18.3	33.3	34.9	63.3	45.7	42.9
FMRT16T-08N	1	25	1 5/16-12	1	21.4	23.8	33.3	38.1	65.0	46.0	50.0
FMRT20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	31.7	41.3	50.8	70.8	52.3	60.5
FMRT24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	38.0	47.6	57.2	85.9	59.2	67.1
FMRT32T-16N	2	50	2 1/2-12	2	45.2	49.0	49.0	73.0	105.2	77.7	76.2

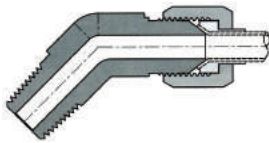
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**FMBT**  
Male Branch Tee



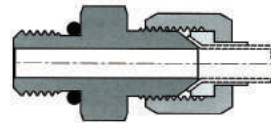
Part Number	Tube O.D.		T (UNF/UN)	t(NPT)	D	D <sub>1</sub>	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>1</sub>
	Inch	Metric									
FMBT2T-01N	1/8	3	5/16-24	1/8	1.6	4.8	11.1	9.5	27.4	19.6	18.3
FMBT3T-01N	3/16	4	3/8-24	1/8	3.2	4.8	11.1	11.1	30.5	21.1	18.3
FMBT4T-01N	1/4	6	7/16-20	1/8	4.4	4.8	11.1	14.3	31.7	22.6	19.8
FMBT5T-01N	5/16	8	1/2-20	1/8	6.0	4.8	14.3	15.9	34.5	24.1	19.8
FMBT6T-02N	3/8	10	9/16-18	1/4	7.5	7.0	14.3	17.5	38.8	26.9	27.7
FMBT8T-03N	1/2	12	3/4-16	3/8	9.9	10.3	19.0	22.2	44.5	31.8	31.0
FMBT10T-04N	5/8	16	7/8-14	1/2	12.3	13.5	22.2	22.2	53.4	36.8	37.3
FMBT12T-06N	3/4	18	1 1/16-12	3/4	15.5	18.3	27.0	31.8	57.7	42.2	40.4
FMBT14T-06N	7/8	22	1 3/16-12	3/4	18.3	18.3	33.3	34.9	63.3	45.7	42.9
FMBT16T-08N	1	25	1 5/16-12	1	21.4	23.8	33.3	38.1	65.0	46.0	50.0
FMBT20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	31.7	41.3	50.8	70.8	52.3	60.5
FMBT24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	38.0	47.6	57.2	85.9	59.2	67.1
FMBT32T-16N	2	50	2 1/2-12	2	45.2	49.0	63.5	73.0	105.2	77.7	76.2

All dimensions are in millimeters. Dimensions are for reference only, subject to change.



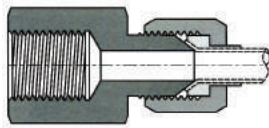
**FHML**  
45° Male Elbow

..... 14



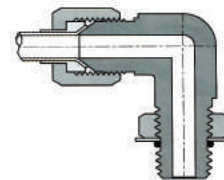
**FOMC-U**  
O-Ring Seal Male Connector(UNF/UN)

..... 16



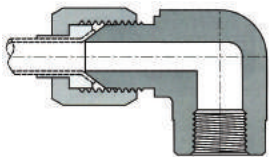
**FFC**  
Female Connector

..... 14



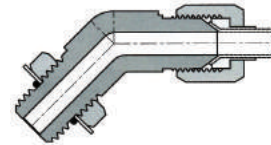
**FOML**  
O-Ring Seal Male Elbow

..... 16



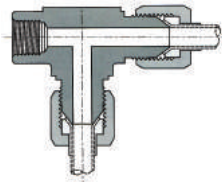
**FFL**  
Female Elbow

..... 14



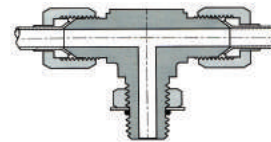
**FOHML**  
O-Ring Seal 45° Male Elbow

..... 16



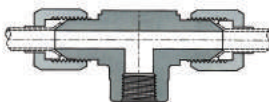
**FFRT**  
Female Run Tee

..... 15



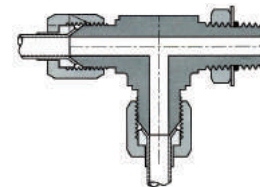
**FOBT**  
O-Ring Seal Run Tee

..... 17



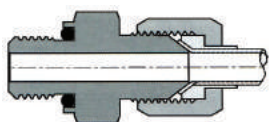
**FFBT**  
Female Branch Tee

..... 15



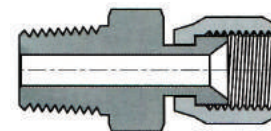
**FORT**  
O-Ring Seal Run Tee

..... 17



**FOMC-G**  
O-Ring Seal Male Connector(PF)

..... 15

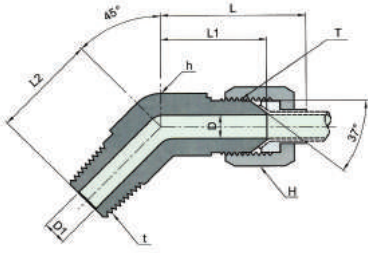


**FMSC**  
Male Swivel Connector

..... 17

## FHML

45° Male Elbow

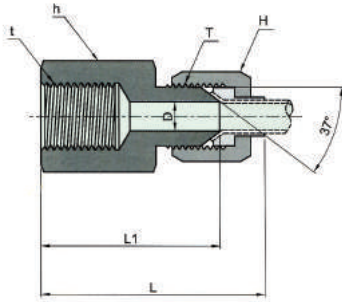


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (NPT)	D	D <sub>1</sub>	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FHML2T-01N	1/8	3	1/8	1.6	4.8	11.1	9.5	25.3	17.5	13.2
FHML3T-01N	3/16	4	1/8	3.2	4.8	11.1	11.1	26.9	17.5	13.2
FHML4T-01N	1/4	6	1/8	4.4	4.8	11.1	14.3	27.4	18.3	16.3
FHML5T-01N	5/16	8	1/8	6.0	4.8	14.3	15.9	30.0	19.6	16.3
FHML6T-02N	3/8	10	1/4	7.5	7.0	14.3	17.5	33.0	21.1	21.8
FHML8T-03N	1/2	12	3/8	9.9	10.3	19.0	22.2	37.6	24.9	24.1
FHML10T-04N	5/8	16	1/2	12.3	13.5	22.2	22.2	44.8	28.2	29.7
FHML12T-06N	3/4	18	3/4	15.5	18.3	27.0	31.8	48.0	32.5	30.5
FHML14T-06N	7/8	22	3/4	18.3	18.3	33.3	34.9	54.4	36.8	33.0
FHML16T-08N	1	25	1	21.4	23.8	33.3	38.1	56.3	37.3	37.6
FHML20T-10N	1 1/4	32	1 1/4	27.4	31.7	41.3	50.8	58.9	40.4	42.4
FHML24T-12N	1 1/2	38	1 1/2	33.3	38.0	47.6	57.2	71.9	45.2	45.0
FHML32T-16N	2	50	2	45.2	49.0	63.5	73.0	83.9	56.4	53.6

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FFC

Female Connector

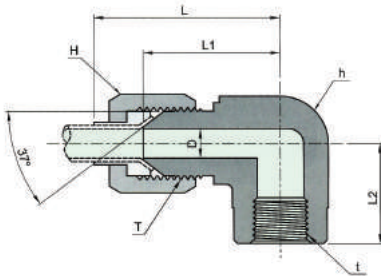


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	T (NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>
FFC2T-01N	1/8	3	5/16-24	1/8	1.6	14.3	9.5	36.2	28.4
FFC3T-01N	3/16	4	3/8-24	1/8	3.2	14.3	11.1	38.1	28.7
FFC4T-01N	1/4	6	7/16-20	1/8	4.4	14.3	14.3	39.3	30.2
FFC5T-01N	5/16	8	1/2-20	1/8	6.0	14.3	15.9	40.1	29.7
FFC6T-02N	3/8	10	9/16-18	1/4	7.5	19.1	17.5	47.5	35.6
FFC8T-03N	1/2	12	3/4-16	3/8	9.9	22.2	22.2	52.3	39.6
FFC10T-04N	5/8	16	7/8-14	1/2	12.3	28.6	22.2	64.6	48.0
FFC12T-06N	3/4	18	1 1/16-12	3/4	15.5	34.9	31.8	67.8	52.3
FFC14T-06N	7/8	22	1 3/16-12	3/4	18.3	34.9	34.9	69.9	52.3
FFC16T-08N	1	25	1 5/16-12	1	21.4	41.3	38.1	78.7	59.7
FFC20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	50.8	50.8	81.7	63.2
FFC24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	60.3	57.2	93.2	66.5
FFC32T-16N	2	50	2 1/2-12	2	45.2	73.0	73.0	102.9	75.4

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FFL

Female Elbow

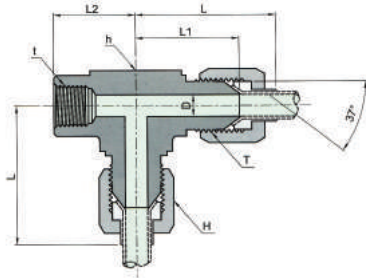


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	T (NPT)	D	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FFL2T-01N	1/8	3	5/16-24	1/8	1.6	9.5	33.2	25.4	16.8
FFL3T-01N	3/16	4	3/8-24	1/8	3.2	11.1	35.6	26.2	16.8
FFL4T-01N	1/4	6	7/16-20	1/8	4.4	14.3	36.5	27.4	16.8
FFL5T-01N	5/16	8	1/2-20	1/8	6.0	15.9	37.8	27.4	16.8
FFL6T-02N	3/8	10	9/16-18	1/4	7.5	17.5	43.1	31.2	22.4
FFL8T-03N	1/2	12	3/4-16	3/8	9.9	22.2	48.8	36.1	25.9
FFL10T-04N	5/8	16	7/8-14	1/2	12.3	22.2	58.3	41.7	31.2
FFL12T-06N	3/4	18	1 1/16-12	3/4	15.5	31.8	63.5	48.0	34.5
FFL14T-06N	7/8	22	1 3/16-12	3/4	18.3	34.9	64.8	47.2	36.1
FFL16T-08N	1	25	1 5/16-12	1	21.4	38.1	74.1	55.1	41.1
FFL20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	50.8	77.7	59.2	43.2
FFL24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	57.2	100.1	73.4	52.8
FFL32T-16N	2	50	2 1/2-12	2	45.2	73.0	111.3	83.8	60.7

All dimensions are in millimeters. Dimensions are for reference only, subject to change.



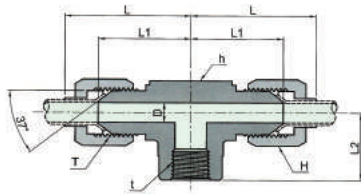
**FFRT**  
Female Run Tee



Part Number	Tube O.D. Inch Metric	T (UNF/UN) t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FFRT2T-01N	1/8 3	5/16-24 1/8	1.6	14.3	9.5	33.2	25.4	16.8
FFRT3T-01N	3/16 4	3/8-24 1/8	3.2	14.3	11.1	35.6	26.2	16.8
FFRT4T-01N	1/4 6	7/16-20 1/8	4.4	14.3	14.3	36.5	27.4	16.8
FFRT5T-01N	5/16 8	1/2-20 1/8	6.0	14.3	15.9	37.8	27.4	16.8
FFRT6T-02N	3/8 10	9/16-18 1/4	7.5	19.1	17.5	43.1	31.2	22.4
FFRT8T-03N	1/2 12	3/4-16 3/8	9.9	22.2	22.2	48.8	36.1	25.9
FFRT10T-04N	5/8 16	7/8-14 1/2	12.3	27.0	22.2	58.3	41.7	31.2
FFRT12T-06N	3/4 18	1 1/16-12 3/4	15.5	33.3	31.8	63.5	48.0	34.5
FFRT14T-06N	7/8 22	1 3/16-12 3/4	18.3	33.3	34.9	64.8	47.2	36.1
FFRT16T-08N	1 25	1 5/16-12 1	21.4	41.3	38.1	74.1	55.1	41.1
FFRT20T-10N	1 1/4 32	1 5/8-12 1 1/4	27.4	47.6	50.8	77.7	59.2	43.2
FFRT24T-12N	1 1/2 38	1 7/8-12 1 1/2	33.3	65.1	57.2	100.1	73.4	52.8
FFRT32T-16N	2 50	2 1/2-12 2	45.2	71.4	73.0	111.3	83.8	60.7

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

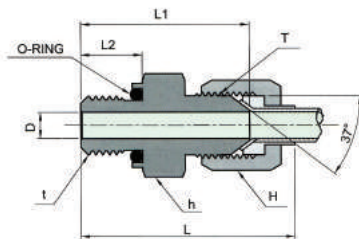
**FFBT**  
Female Branch Tee



Part Number	Tube O.D. Inch Metric	T (UNF/UN) t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FFBT2T-01N	1/8 3	5/16-24 1/8	1.6	14.3	9.5	33.2	25.4	16.8
FFBT3T-01N	3/16 4	3/8-24 1/8	3.2	14.3	11.1	35.6	26.2	16.8
FFBT4T-01N	1/4 6	7/16-20 1/8	4.4	14.3	14.3	36.5	27.4	16.8
FFBT5T-01N	5/16 8	1/2-20 1/8	6.0	14.3	15.9	37.8	27.4	16.8
FFBT6T-02N	3/8 10	9/16-18 1/4	7.5	19.0	17.5	43.1	31.2	22.4
FFBT8T-03N	1/2 12	3/4-16 3/8	9.9	22.2	22.2	48.8	36.1	25.9
FFBT10T-04N	5/8 16	7/8-14 1/2	12.3	27.0	22.2	58.3	41.7	31.2
FFBT12T-06N	3/4 18	1 1/16-12 3/4	15.5	33.3	31.8	63.5	48.0	34.5
FFBT14T-06N	7/8 22	1 3/16-12 3/4	18.3	33.3	34.9	64.8	47.2	36.1
FFBT16T-08N	1 25	1 5/16-12 1	21.4	41.3	38.1	74.1	55.1	41.1
FFBT20T-10N	1 1/4 32	1 5/8-12 1 1/4	27.4	47.6	50.8	77.7	59.2	43.2
FFBT24T-12N	1 1/2 38	1 7/8-12 1 1/2	33.3	65.1	57.2	100.1	73.4	52.8
FFBT32T-16N	2 50	2 1/2-12 2	45.2	71.4	73.0	111.3	83.8	60.7

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

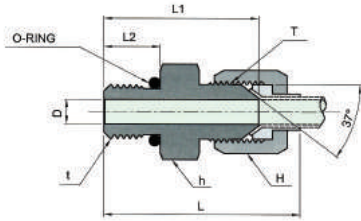
**FOMC-G**  
O-Ring Seal Male  
Connector (PF)



Part Number	Tube O.D. Inch Metric	T (UNF/UN) t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FOMC2T-01G	1/8 3	5/16-24 1/8	1.6	11.1	9.5	35.3	27.5	8.0
FOMC3T-01G	3/16 4	3/8-24 1/8	3.2	12.7	11.1	37.9	28.5	8.0
FOMC4T-01G	1/4 6	7/16-20 1/8	4.4	14.2	14.3	39.3	30.2	8.0
FOMC5T-01G	5/16 8	1/2-20 1/8	6.0	15.8	15.9	40.6	30.2	8.0
FOMC6T-02G	3/8 10	9/16-18 1/4	7.5	17.4	17.5	46.9	35.0	12.0
FOMC8T-03G	1/2 12	3/4-16 3/8	9.9	22.2	22.2	51.4	38.7	12.0
FOMC10T-04G	5/8 16	7/8-14 1/2	12.3	25.4	22.2	61.1	44.5	14.0
FOMC12T-06G	3/4 18	1 1/16-12 3/4	15.5	31.7	31.8	66.4	50.9	16.0
FOMC14T-06G	7/8 22	1 3/16-12 3/4	18.3	34.9	34.9	69.0	51.4	16.0
FOMC16T-08G	1 25	1 5/16-12 1	21.4	38.0	38.1	71.7	52.7	18.0
FOMC20T-10G	1 1/4 32	1 5/8-12 1 1/4	27.4	42.8	50.8	78.5	60.0	20.0
FOMC24T-12G	1 1/2 38	1 7/8-12 1 1/2	33.3	55.0	57.2	92.8	66.1	21.0
FOMC32T-16G	2 50	2 1/2-12 2	45.2	70.0	73.0	108.0	80.5	25.0

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

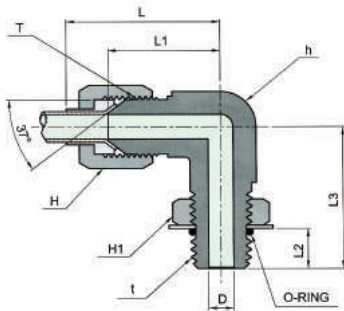
**FOMC-U**  
O-Ring Seal Male  
Connector (UNF/UN)



Part Number	Tube O.D. Inch Metric	T (NPT)	T (UNF/UN)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FOMC2T-02U	1/8 3	1/8	5/16-24	1.6	11.1	9.5	34.7	26.9	7.5
FOMC3T-03U	3/16 4	1/8	3/8-24	3.2	12.7	11.1	37.3	27.9	7.5
FOMC4T-04U	1/4 6	1/8	7/16-20	4.4	14.2	14.3	40.3	31.2	9.1
FOMC5T-05U	5/16 8	1/8	1/2-20	6.0	15.8	15.9	41.6	31.2	9.1
FOMC6T-06U	3/8 10	1/4	9/16-18	7.5	17.4	17.5	44.9	33.0	9.9
FOMC8T-08U	1/2 12	3/8	3/4-16	9.9	22.2	22.2	50.3	37.6	11.1
FOMC10T-10U	5/8 16	1/2	7/8-14	12.3	25.4	22.2	59.8	43.2	12.7
FOMC12T-12U	3/4 18	3/4	1 1/16-12	15.5	31.7	31.8	65.5	50.0	15.1
FOMC14T-14U	7/8 22	3/4	1 3/16-12	18.3	34.9	34.9	68.1	50.5	15.1
FOMC16T-16U	1 25	1	1 5/16-12	21.4	38.1	38.1	70.8	51.8	15.1
FOMC20T-20U	1 1/4 32	1 1/4	1 5/8-12	27.4	47.6	50.8	73.6	55.1	15.1
FOMC24T-24U	1 1/2 38	1 1/2	1 7/8-12	33.3	53.9	57.2	86.9	60.2	15.1
FOMC32T-32U	2 50	2	2 1/2-12	45.2	69.8	73.0	98.1	70.6	15.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

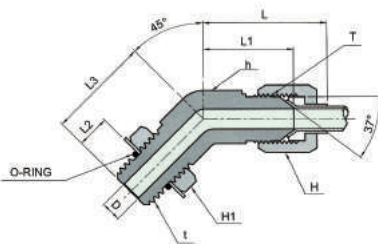
**FOML**  
O-Ring Seal Male Elbow



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
FOML2T-02U	1/8 3	5/16-24	5/16-24	1.6	11.1	9.5	14.2	27.4	19.6	8.4	23.9
FOML3T-03U	3/16 4	3/8-24	3/8-24	3.2	11.1	11.1	15.8	30.5	21.1	8.4	23.9
FOML4T-04U	1/4 6	7/16-20	7/16-20	4.4	11.1	14.3	17.4	31.7	22.6	9.8	26.2
FOML5T-05U	5/16 8	1/2-20	1/2-20	6.0	14.3	15.9	19.0	34.5	24.1	9.8	28.7
FOML6T-06U	3/8 10	9/16-18	9/16-18	7.5	14.3	17.5	20.6	38.8	26.9	9.9	31.8
FOML8T-08U	1/2 12	3/4-16	3/4-16	9.9	19.0	22.2	25.4	44.5	31.8	11.0	36.8
FOML10T-10U	5/8 16	7/8-14	7/8-14	12.3	22.2	22.2	28.5	53.4	36.8	12.5	43.2
FOML12T-12U	3/4 18	1 1/16-12	1/16-12	15.5	27.0	31.8	34.9	57.7	42.2	16.5	49.3
FOML14T-14U	7/8 22	1 3/16-12	3/16-12	18.3	33.3	34.9	38.1	63.3	45.7	16.5	50.8
FOML16T-16U	1 25	1 5/16-12	5/16-12	21.4	33.3	38.1	41.2	65.0	46.0	16.5	52.1
FOML20T-20U	1 1/4 32	1 5/8-12	1 5/8-12	27.4	41.3	50.8	47.6	70.8	52.3	16.5	57.2
FOML24T-24U	1 1/2 38	1 7/8-12	1 7/8-12	33.3	47.6	57.2	53.9	85.9	59.2	16.5	60.7
FOML32T-32U	2 50	2 1/2-12	2 1/2-12	45.2	63.5	73.0	69.8	105.2	77.7	16.5	73.4

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

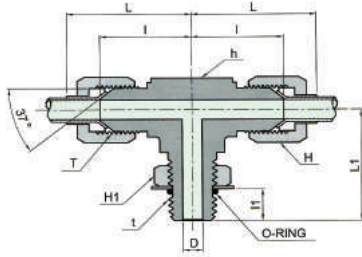
**FOHML**  
O-Ring Seal 45° Male Elbow



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
FOHML2T-02U	1/8 3	5/16-24	5/16-24	1.6	11.1	9.5	14.2	25.3	17.5	8.4	23.9
FOHML3T-03U	3/16 4	3/8-24	3/8-24	3.2	11.1	11.1	15.8	26.9	17.5	8.4	23.9
FOHML4T-04U	1/4 6	7/16-20	7/16-20	4.4	11.1	14.3	17.4	27.4	18.3	9.8	23.6
FOHML5T-05U	5/16 8	1/2-20	1/2-20	6.0	14.3	15.9	19.0	30.3	19.6	9.8	25.4
FOHML6T-06U	3/8 10	9/16-18	9/16-18	7.5	14.3	17.5	20.6	33.0	21.1	9.9	28.4
FOHML8T-08U	1/2 12	3/4-16	3/4-16	9.9	19.0	22.2	25.4	37.6	24.9	11.0	32.5
FOHML10T-10U	5/8 16	7/8-14	7/8-14	12.3	22.2	22.2	28.5	44.8	28.2	12.5	36.6
FOHML12T-12U	3/4 18	1 1/16-12	1/16-12	15.5	27.0	31.8	34.9	48.0	32.5	16.5	43.9
FOHML14T-14U	7/8 22	1 3/16-12	3/16-12	18.3	33.3	34.9	38.1	54.4	36.8	16.5	45.7
FOHML16T-16U	1 25	1 5/16-12	5/16-12	21.4	33.3	38.1	41.2	56.3	37.3	16.5	47.2
FOHML20T-20U	1 1/4 32	1 5/8-12	1 5/8-12	27.4	41.3	50.8	47.6	58.9	40.4	16.5	48.5
FOHML24T-24U	1 1/2 38	1 7/8-12	1 7/8-12	33.3	47.6	57.2	53.9	71.9	45.2	16.5	48.5
FOHML32T-32U	2 50	2 1/2-12	2 1/2-12	45.2	63.5	73.0	69.8	83.9	56.4	16.5	47.2

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

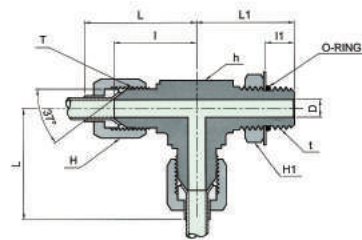
## FOBT



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	I	I <sub>1</sub>
FOBT2T-02U	1/8 3	5/16-24	5/16-24	1.6	11.1	9.5	14.2	27.4	23.9	19.6	8.4
FOBT3T-03U	3/16 4	3/8-24	3/8-24	3.2	11.1	11.1	15.8	30.5	23.9	21.1	8.4
FOBT4T-04U	1/4 6	7/16-20	7/16-20	4.4	11.1	14.3	17.4	31.7	26.2	22.6	9.8
FOBT5T-05U	5/16 8	1/2-20	1/2-20	6.0	14.3	15.9	19.0	34.5	28.7	24.1	9.8
FOBT6T-06U	3/8 10	9/16-18	9/16-18	7.5	14.3	17.5	20.6	38.8	31.8	26.9	9.9
FOBT8T-08U	1/2 12	3/4-16	3/4-16	9.9	19.0	22.2	25.4	44.5	36.8	31.8	11.0
FOBT10T-10U	5/8 16	7/8-14	7/8-14	12.3	22.2	22.2	28.5	53.4	43.2	36.8	12.5
FOBT12T-12U	3/4 18	1 1/16-12 1	1/16-12 15.5	27.0	31.8	34.9	57.7	49.3	42.2	16.5	
FOBT14T-14U	7/8 22	1 3/16-12 1	3/16-12 18.3	33.3	35.0	38.1	63.3	50.8	45.7	16.5	
FOBT16T-16U	1 25	1 5/16-12 1	5/16-12 21.4	33.3	38.0	41.2	65.0	52.1	46.0	16.5	
FOBT20T-20U	1 1/4 32	1 5/8-12	1 5/8-12 37.5	41.3	50.8	47.6	70.8	57.2	52.3	16.5	
FOBT24T-24U	1 1/2 38	1 7/8-12	1 7/8-12 33.3	47.6	57.2	53.9	85.9	60.7	59.2	16.5	
FOBT32T-32U	2 50	2 1/2-12	2 1/2-12 45.2	63.5	73.0	69.8	105.2	73.4	77.7	16.5	

## FORT

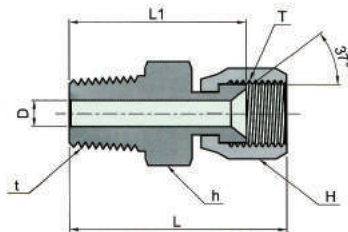
O-Ring Seal Run Tee



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	I	I <sub>1</sub>
FORT2T-02U	1/8 3	5/16-24	5/16-24	1.6	11.1	9.5	14.2	27.4	23.9	19.6	8.4
FORT3T-03U	3/16 4	3/8-24	3/8-24	3.2	11.1	11.1	15.8	30.5	23.9	21.1	8.4
FORT4T-04U	1/4 6	7/16-20	7/16-20	4.4	11.1	14.3	17.4	31.7	26.2	22.6	9.8
FORT5T-05U	5/16 8	1/2-20	1/2-20	6.0	14.3	15.9	19.0	34.5	28.7	24.1	9.8
FORT6T-06U	3/8 10	9/16-18	9/16-18	7.5	14.3	17.5	20.6	38.8	31.8	26.9	9.9
FORT8T-08U	1/2 12	3/4-16	3/4-16	9.9	19.0	22.2	25.4	44.5	36.8	31.8	11.0
FORT10T-10U	5/8 16	7/8-14	7/8-14	12.3	22.2	22.2	28.5	53.4	43.2	36.8	12.5
FORT12T-12U	3/4 18	1 1/16-12 1	1/16-12 15.5	27.0	31.8	34.9	57.7	49.3	42.2	16.5	
FORT14T-14U	7/8 22	1 3/16-12 1	3/16-12 18.3	33.3	34.9	38.1	63.3	50.8	45.7	16.5	
FORT16T-16U	1 25	1 5/16-12 1	5/16-12 21.4	33.3	38.1	41.2	65.0	52.1	46.0	16.5	
FORT20T-20U	1 1/4 32	1 5/8-12	1 5/8-12 27.4	41.3	50.8	47.6	70.8	57.2	52.3	16.5	
FORT24T-24U	1 1/2 38	1 7/8-12	1 7/8-12 33.3	47.6	57.2	53.9	85.9	60.7	59.2	16.5	
FORT32T-32U	2 50	2 1/2-12	2 1/2-12 45.2	63.5	73.0	69.8	105.2	73.4	77.7	16.5	

## FMSC

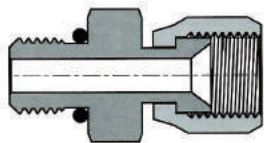
Male Swivel Connector



Part Number	Tube O.D. Inch Metric	T (UNF/UN)	t (NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>
FMSC2T-02N	1/8 3	5/16-24	1/8	1.6	11.1	11.1	30.0	22.0
FMSC3T-03N	3/16 4	3/8-24	1/8	3.2	11.1	12.7	32.0	23.5
FMSC4T-04N	1/4 6	7/16-20	1/8	4.4	12.7	14.2	34.2	25.5
FMSC5T-05N	5/16 8	1/2-20	1/8	6.0	14.2	16.0	35.0	25.5
FMSC6T-06N	3/8 10	9/16-18	1/4	7.5	16.0	17.4	40.2	30.7
FMSC8T-08N	1/2 12	3/4-16	3/8	9.9	21.0	22.2	42.7	32.0
FMSC10T-10N	5/8 16	7/8-14	1/2	12.3	23.8	25.4	51.3	38.6
FMSC12T-12N	3/4 18	1 1/16-12	3/4	15.5	29.0	32.0	54.5	40.2
FMSC14T-14N	7/8 22	1 3/16-12	3/4	18.3	32.0	35.0	56.0	41.2
FMSC16T-16N	1 25	1 5/16-12	1	21.4	36.0	38.0	63.7	48.6
FMSC20T-20N	1 1/4 32	1 5/8-12	1 1/4	27.4	46.0	50.8	68.9	53.0
FMSC24T-24N	1 1/2 38	1 7/8-12	1 1/2	33.3	50.0	57.2	77.6	59.0
FMSC32T-32N	2 50	2 1/2-12	2	45.2	66.7	73.0	92.9	69.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

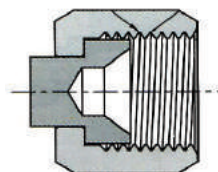




**FOMSC**

O- Ring Seal Male Swivel Connector

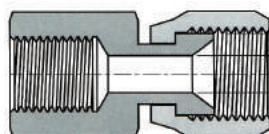
..... 19



**FC**

Tube Cap

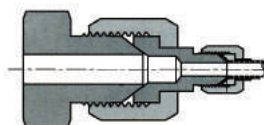
..... 21



**FFSC**

Female Swivel Connector

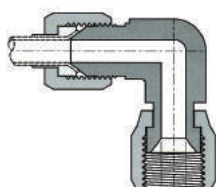
..... 19



**FRA**

Reducer Adapter

..... 21



**FSL**

Swivel Elbow

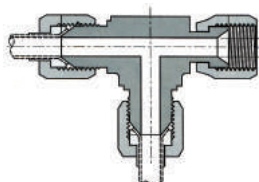
..... 19



**FLN**

Blukhead Lock Nut

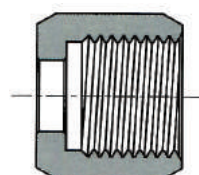
..... 21



**FSRT**

Swivel Run Tee

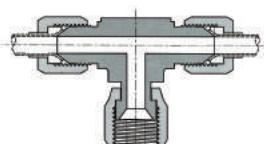
..... 20



**FN**

Nut

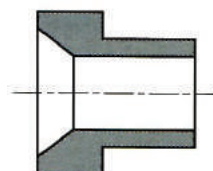
..... 22



**FSBT**

Swivel Branch Tee

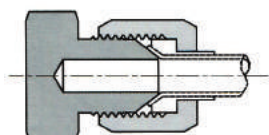
..... 20



**FS**

Sleeve

..... 22

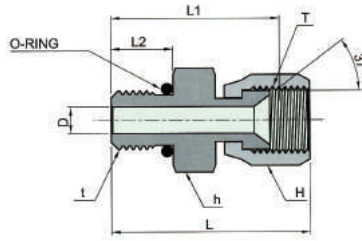


**FP**

Plug

..... 20

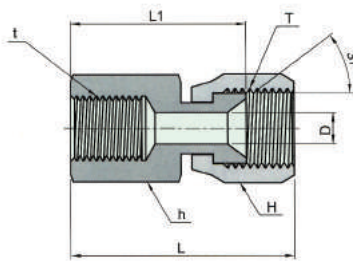
**FOMSC**  
O-Ring Seal Male Swivel Connector



Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>	L <sub>2</sub>
FOMSC2T-02U	1/8	3	5/16-24	1/8	1.6	11.1	11.1	30.4	22.5	7.5
FOMSC3T-03U	3/16	4	3/8-24	1/8	3.2	12.7	12.7	31.0	22.7	7.5
FOMSC4T-04U	1/4	6	7/16-20	1/8	4.4	14.2	14.2	33.9	25.2	9.1
FOMSC5T-05U	5/16	8	1/2-20	1/8	6.0	15.8	15.8	35.7	26.2	9.1
FOMSC6T-06U	3/8	10	9/16-18	1/4	7.5	17.4	19.0	37.4	27.9	9.9
FOMSC8T-08U	1/2	12	3/4-16	3/8	9.9	22.2	22.2	41.6	30.9	11.1
FOMSC10T-10U	5/8	16	7/8-14	1/2	12.3	25.4	27.0	47.6	34.9	12.7
FOMSC12T-12U	3/4	18	1 1/16-12	3/4	15.5	31.8	32.0	54.4	40.1	15.1
FOMSC14T-14U	7/8	22	1 3/16-12	3/4	18.3	34.9	34.9	55.6	40.9	15.1
FOMSC16T-16U	1	25	1 5/16-12	1	21.4	38.1	38.1	56.8	41.7	15.1
FOMSC20T-20U	1 1/4	32	1 5/8-12	1 1/4	27.4	47.6	50.8	63.2	47.3	15.1
FOMSC24T-24U	1 1/2	38	1 7/8-12	1 1/2	33.3	54.0	60.0	71.3	52.7	15.1
FOMSC32T-32U	2	50	2 1/2-12	2	45.2	70.0	73.0	72.5	58.7	15.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

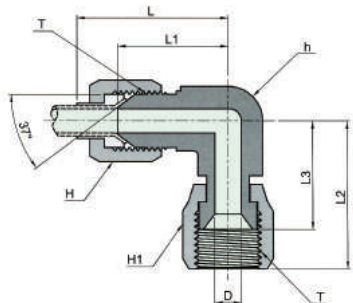
**FFSC**  
Female Swivel Connector



Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	t(NPT)	D	h (HEX)	H (HEX)	L	L <sub>1</sub>
FFSC2T-01N	1/8	3	5/16-24	1/8	1.6	11.1	11.1	36.1	28.2
FFSC3T-01N	3/16	4	3/8-24	1/8	3.2	12.7	12.7	37.3	29.0
FFSC4T-01N	1/4	6	7/16-20	1/8	4.4	14.2	14.2	39.7	31.0
FFSC5T-01N	5/16	8	1/2-20	1/8	6.0	15.8	16.0	40.5	31.0
FFSC6T-02N	3/8	10	9/16-18	1/4	7.5	19.0	17.4	45.8	36.3
FFSC8T-03N	1/2	12	3/4-16	3/8	9.9	22.2	22.2	47.0	38.9
FFSC10T-04N	5/8	16	7/8-14	1/2	12.3	27.0	25.4	51.6	48.0
FFSC12T-06N	3/4	18	1 1/16-12	3/4	15.5	32.0	32.0	66.6	52.3
FFSC14T-06N	7/8	22	1 3/16-12	3/4	18.3	34.9	35.0	67.8	53.1
FFSC16T-08N	1	25	1 5/16-12	1	21.4	38.1	38.0	73.5	58.4
FFSC20T-10N	1 1/4	32	1 5/8-12	1 1/4	27.4	50.8	50.8	78.1	62.2
FFSC24T-12N	1 1/2	38	1 7/8-12	1 1/2	33.3	60.0	57.2	86.7	68.1
FFSC32T-16N	2	50	2 1/2-12	2	45.2	73.0	73.0	89.3	65.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**FSL**  
Swivel Elbow

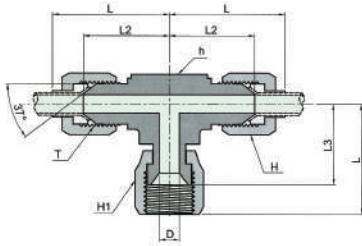


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
FSL-2T	1/8	3	5/16-24	1.6	11.1	9.5	11.1	27.4	19.6	24.6	16.7
FSL-3T	3/16	4	3/8-24	3.2	11.1	11.1	12.7	30.5	21.1	25.4	17.1
FSL-4T	1/4	6	7/16-20	4.4	11.1	14.3	14.3	31.7	22.6	25.4	16.7
FSL-5T	5/16	8	1/2-20	6.0	14.3	15.9	15.9	34.5	24.1	26.9	17.4
FSL-6T	3/8	10	9/16-18	7.5	14.3	17.5	17.5	38.8	26.9	31.8	22.3
FSL-8T	1/2	12	3/4-16	9.9	19.0	22.2	22.2	44.5	31.8	35.1	24.4
FSL-10T	5/8	16	7/8-14	12.3	22.2	22.2	25.4	53.4	36.8	41.1	28.4
FSL-12T	3/4	18	1 1/16-12	15.5	27.0	31.8	31.8	57.7	42.2	44.4	30.1
FSL-14T	7/8	22	1 3/16-12	18.3	33.3	34.9	34.9	63.3	45.7	45.2	30.5
FSL-16T	1	25	1 5/16-12	21.4	33.3	38.1	38.1	65.0	46.0	50.8	35.7
FSL-20T	1 1/4	32	1 5/8-12	27.4	41.3	50.8	50.8	70.8	52.3	58.7	42.8
FSL-24T	1 1/2	38	1 7/8-12	33.3	47.6	57.2	57.2	85.9	59.2	65.8	47.2
FSL-32T	2	50	2 1/2-12	45.2	63.5	73.0	73.0	105.2	77.7	85.9	62.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FSRT

### Swivel Run Tee

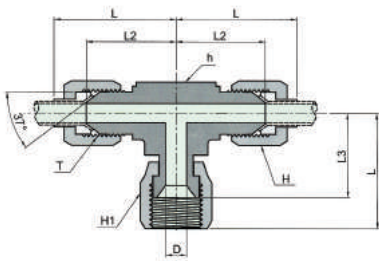


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
FSRT-2T	1/8	3	5/16-24	1.6	11.1	9.5	11.1	27.4	24.6	19.6	16.7
FSRT-3T	3/16	4	3/8-24	3.2	11.1	11.1	12.7	30.5	25.4	21.1	17.1
FSRT-4T	1/4	6	7/16-20	4.4	11.1	14.3	14.3	31.7	25.4	22.6	16.7
FSRT-5T	5/16	8	1/2-20	6.0	14.3	15.9	15.9	34.5	26.9	24.1	17.4
FSRT-6T	3/8	10	9/16-18	7.5	14.3	17.5	17.5	38.8	31.8	26.9	22.3
FSRT-8T	1/2	12	3/4-16	9.9	19.0	22.2	22.2	44.5	35.1	31.8	24.4
FSRT-10T	5/8	16	7/8-14	12.3	22.2	22.2	25.4	53.4	41.1	36.8	28.4
FSRT-12T	3/4	18	1 1/16-12	15.5	27.0	31.8	31.8	57.7	44.4	42.2	30.1
FSRT-14T	7/8	22	1 3/16-12	18.3	33.3	34.9	34.9	63.3	45.2	45.7	30.5
FSRT-16T	1	25	1 5/16-12	21.4	33.3	38.1	38.1	65.0	50.8	46.0	35.7
FSRT-20T	1 1/4	32	1 5/8-12	27.4	41.3	50.8	50.8	70.8	58.7	52.3	42.8
FSRT-24T	1 1/2	38	1 7/8-12	33.3	47.6	57.2	57.0	85.9	65.8	59.2	47.2
FSRT-32T	2	50	2 1/2-12	45.2	63.5	73.0	73.0	105.2	85.9	77.7	62.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FSBT

### Swivel Branch Tee

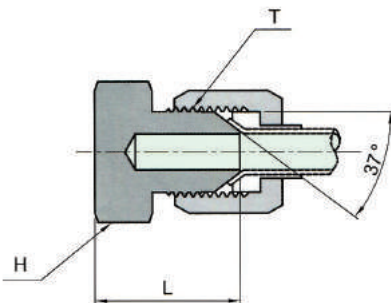


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	D	h (HEX)	H (HEX)	H <sub>1</sub> (HEX)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
FSBT-2T	1/8	3	5/16-24	1.6	11.1	9.5	11.1	27.4	24.6	19.6	16.7
FSBT-3T	3/16	4	3/8-24	3.2	11.1	11.1	12.7	30.5	25.4	21.1	17.1
FSBT-4T	1/4	6	7/16-20	4.4	11.1	14.3	14.3	31.7	25.4	22.6	16.7
FSBT-5T	5/16	8	1/2-20	6.0	14.3	16.0	15.9	34.5	26.9	24.1	17.4
FSBT-6T	3/8	10	9/16-18	7.5	14.3	17.5	17.5	38.8	31.8	26.9	22.3
FSBT-8T	1/2	12	3/4-16	9.9	19.0	22.2	22.2	44.5	35.1	31.8	24.4
FSBT-10T	5/8	16	7/8-14	12.3	22.2	22.2	25.4	53.4	41.1	36.8	28.4
FSBT-12T	3/4	18	1 1/16-12	15.5	27.0	32.0	31.8	57.7	44.4	42.2	30.1
FSBT-14T	7/8	22	1 3/16-12	18.3	33.3	34.9	34.9	63.3	45.2	45.7	30.5
FSBT-16T	1	25	1 5/16-12	21.4	33.3	38.1	38.1	65.0	50.8	46.0	35.7
FSBT-20T	1 1/4	32	1 5/8-12	27.4	41.3	50.8	50.8	70.8	58.7	52.3	42.8
FSBT-24T	1 1/2	38	1 7/8-12	33.3	47.6	57.2	57.0	85.9	65.8	59.2	47.2
FSBT-32T	2	50	2 1/2-12	45.2	63.5	73.0	73.0	105.2	85.9	77.7	62.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## FP

### Plug

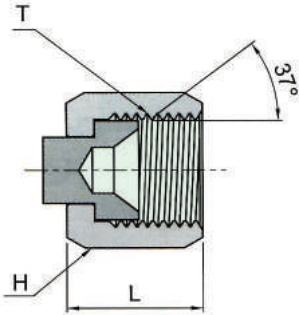


Part Number	Tube O.D. Inch	Tube O.D. Metric	T (UNF/UN)	h (HEX)	L
FP-2T	1/8	3	5/16-24	11.1	17.8
FP-3T	3/16	4	3/8-24	11.1	18.5
FP-4T	1/4	6	7/16-20	12.7	20.3
FP-5T	5/16	8	1/2-20	14.3	20.3
FP-6T	3/8	10	9/16-18	15.9	21.3
FP-8T	1/2	12	3/4-16	20.6	23.9
FP-10T	5/8	16	7/8-14	23.8	27.9
FP-12T	3/4	18	1 1/16-12	28.6	32.5
FP-14T	7/8	22	1 3/16-12	31.8	33.3
FP-16T	1	25	1 5/16-12	34.9	33.8
FP-20T	1 1/4	32	1 5/8-12	42.9	36.8
FP-24T	1 1/2	38	1 7/8-12	50.8	41.9
FP-32T	2	50	2 1/2-12	66.7	52.1

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**FC**

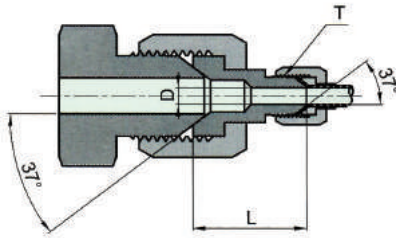
Tube Cap



Part Number	Tube O.D.		T (UNF/UN)	h (HEX)	L
	Inch	Metric			
FC-2T	1/8	3	5/16-24	9.5	13.7
FC-3T	3/16	4	3/8-24	11.1	15.2
FC-4T	1/4	6	7/16-20	14.3	15.5
FC-5T	5/16	8	1/2-20	15.9	17.0
FC-6T	3/8	10	9/16-18	17.5	18.3
FC-8T	1/2	12	3/4-16	22.2	21.3
FC-10T	5/8	16	7/8-14	22.2	24.6
FC-12T	3/4	18	1 1/16-12	31.8	25.9
FC-14T	7/8	22	1 3/16-12	34.9	27.4
FC-16T	1	25	1 5/16-12	38.1	28.4
FC-20T	1 1/4	32	1 5/8-12	50.8	31.0
FC-24T	1 1/2	38	1 7/8-12	57.2	35.8
FC-32T	2	50	2 1/2-12	73.0	44.2

**FRA**

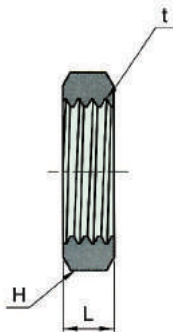
Reducer Adapter



Part Number	Reducing Tube O.D.	T (UNF/UN)	D	L
FRA8T-4T	1/2 x 1/4	7/16-20	4.4	25.4
FRA8T-6T	1/2 x 3/8	9/16-18	7.5	25.4
FRA10T-4T	5/8 x 1/4	7/16-20	4.4	26.2
FRA10T-6T	5/8 x 3/8	9/16-18	7.5	26.2
FRA12T-4T	3/4 x 1/4	7/16-20	4.4	27.7
FRA12T-6T	3/4 x 3/8	9/16-18	7.5	27.7
FRA12T-8T	3/4 x 1/2	3/4-16	10.0	30.2
FRA16T-12T	1 x 3/4	1 1/16-12	15.5	37.3
FRA20T-12T	1 1/4 x 3/4	1 1/16-12	15.5	38.3
FRA20T-16T	1 1/4 x 1	1 5/16-12	21.5	40.3
FRA20T-20T	1 1/2 x 1 1/4	1 5/8-12	27.5	42.9

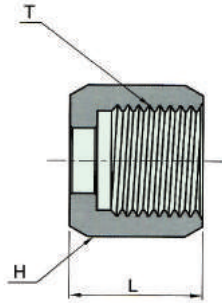
**FLN**

Bulkhead Lock Nut



Part Number	Tube O.D.		T (UNF/UN)	h (HEX)	L
	Inch	Metric			
FLN-2T	1/8	3	5/16-24	14.3	5.6
FLN-3T	3/16	4	3/8-24	15.9	5.6
FLN-4T	1/4	6	7/16-20	17.5	7.1
FLN-5T	5/16	8	1/2-20	19.1	7.1
FLN-6T	3/8	10	9/16-18	20.6	6.9
FLN-8T	1/2	12	3/4-16	25.4	7.9
FLN-10T	5/8	16	7/8-14	28.6	9.1
FLN-12T	3/4	18	1 1/16-12	34.9	10.4
FLN-14T	7/8	22	1 3/16-12	38.1	10.4
FLN-16T	1	25	1 5/16-12	41.3	10.4
FLN-20T	1 1/4	32	1 5/8-12	47.6	10.4
FLN-24T	1 1/2	38	1 7/8-12	54.0	10.4
FLN-32T	2	50	2 1/2-12	69.9	10.4

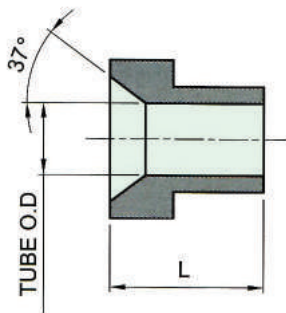
**FN**  
Nut



Part Number	Tube O.D.		T (UNF/UN)	h (HEX)	L
	Inch	Metric			
FN-2T	1/8	3	5/16-24	9.5	14.0
FN-3T	3/16	4	3/8-24	11.1	15.5
FN-4T	1/4	6	7/16-20	14.3	75.8
FN-5T	5/16	8	1/2-20	15.9	17.3
FN-6T	3/8	10	9/16-18	17.5	18.5
FN-8T	1/2	12	3/4-16	22.2	21.6
FN-10T	5/8	16	7/8-14	22.2	24.9
FN-12T	3/4	18	1 1/16-12	31.8	26.2
FN-14T	7/8	22	1 3/16-12	34.9	27.7
FN-16T	1	25	1 5/16-12	38.1	28.7
FN-20T	1 1/4	32	1 5/8-12	50.8	31.2
FN-24T	1 1/2	38	1 7/8-12	57.2	36.1
FN-32T	2	50	2 1/2-12	73.0	44.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**FS**  
Sleeve



Part Number	Tube O.D.		Tube O.D.		
	Inch	Metric	Inch	Metric	
FS-2T	FS-2MT	1/8	-	8.6	-
FS-3T	FS-3MT	3/16	-	8.6	-
FS-4T	FS-4MT	1/4	6	10.4	10.4
FS-5T	FS-5MT	5/16	8	11.2	11.2
FS-6T	FS-6MT	3/8	10	12.7	12.7
FS-8T	FS-8MT	1/2	12	14.2	14.2
FS-10T	FS-10MT	5/8	16	16.8	16.8
FS-12T	FS-12MT	3/4	18	17.3	17.3
FS-14T	FS-14MT	7/8	22	19.3	19.3
FS-16T	FS-16MT	1	25	19.8	19.8
FS-20T	FS-20MT	1 1/4	32	23.1	23.1
FS-24T	FS-24MT	1 1/2	38	28.4	28.4
FS-32T	FS-32MT	2	50	30.2	30.2

All dimensions are in millimeters. Dimensions are for reference only, subject to change.



# SILVER BRAZING TYPE



## 1. Applicable pipe

- Copper pipe, size 8A(O.D 12mm)~ 50A(O.D 57mm)
- AL-BR pipe, size 8A(O.D 12mm)~ 50A(O.D 57mm)

## 2. Nominal pressure

- Ambient temp. : -30°C~40°C

Class	Nominal Pressure (kgf/cm <sup>2</sup> )	Designation mark
Low pressure Fittings	50	K50
High pressure Fittings	210	k21

- Remark 1. see part A2.Nominal Pressure under high temperature for over the above ambient Temperature
- 2. The silver wire starts melting at temperature 635°C

## 3. Materials for silver brazing type fittings

- JIS H3250 C3604 for union nut, C3771
- JIS H3300 C6870, C6871, C6872
- JIS E3261 BAG1, BAG1A, BAG7 for silver wire

## 4. Designation of pipe size

Nominal size(A)	Unit:mm										
	8	10	15	20	25	32	32	40	40	50	50
Pipe O.D	12	16	20	25	30	38	40	44.5	45	55	57
Mark	12	16	20	25	30	38	40	44	45	55	57

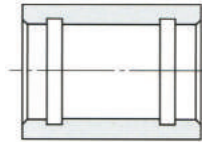
## 5. Instruction

It is Recommended to do cleaning fitting and pipe, before brazing, and to use suitable brazing fluk & ambient gas for atain good brazing quality

The fittings for brazing shall be uniformly heated to a temperature between 650°C and 760°C at around each part of silver ring zone

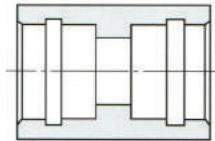
Rapid cooling after brazing can cause cracking by contraction

**IS**  
Sleeve-50K



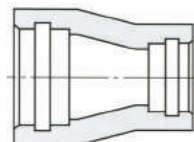
26

**IC**  
Coupling-50K



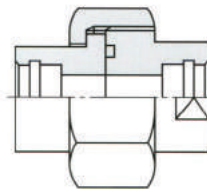
26

**IR**  
Reducer-50K



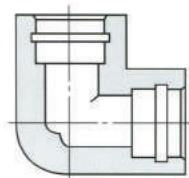
26

**IU**  
Union-50K



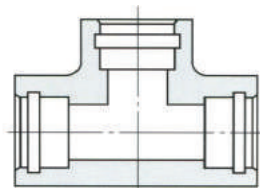
26

**IL**  
Elbow-50K



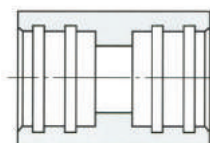
27

**IT**  
Tee-50K



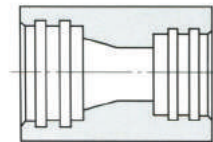
27

**IC**  
Coupling-210K



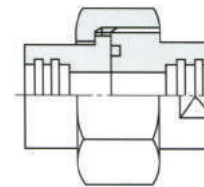
27

**IR**  
Reducer-201K



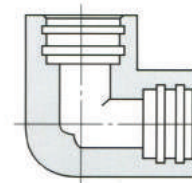
27

**IU**  
Union-210K



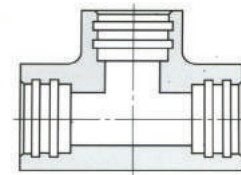
28

**IL**  
Elbow-210K



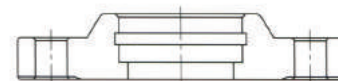
28

**IT**  
Tee-210K



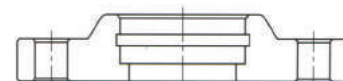
28

**FLANGE**  
Class 150 & Class 300



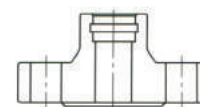
29

**FLANGE**  
5K, 10K, 20K,30K



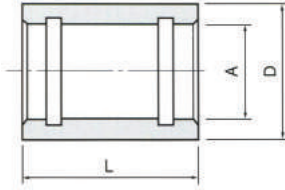
29

**FLANGE**  
5K, 10K, 20K,30K



29

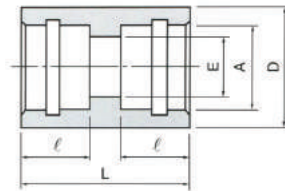
**IS**  
Sleeve - 50K



Unit: mm

Designations	Pipe O.D. A	D	L
IS-K05-12	12	18	23
IS-K05-16	16	22	23
IS-K05-20	20	27	23
IS-K05-25	25	32	23
IS-K05-30	30	38	34
IS-K05-38	38	45	34
IS-K05-40	40	47	34
IS-K05-44	44.5	52	34
IS-K05-45	45	53	34
IS-K05-55	55	63	35
IS-K05-57	57	65	35

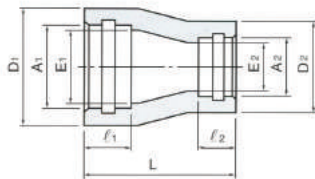
**IC**  
Coupling - 50K



Unit: mm

Designations	Pipe O.D. A	E	D	l	L
IC-K05-12	12	10	18	10	23
IC-K05-16	16	14	22	10	23
IC-K05-20	20	17	27	10	23
IC-K05-25	25	22	32	10	23
IC-K05-30	30	27	38	15	34
IC-K05-38	38	34	45	15	34
IC-K05-40	40	36	47	15	34
IC-K05-44	44.5	40	52	15	34
IC-K05-45	45	40	53	15	34
IC-K05-55	55	49	63	15	35
IC-K05-57	57	51	65	15	35

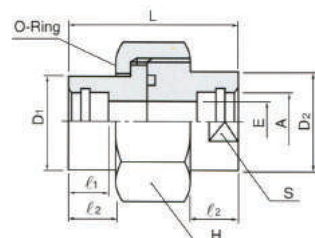
**IR**  
Reducer - 50K



Unit: mm

Designations	Pipe O.D.			Pipe O.D.			l <sub>1</sub>	l <sub>2</sub>	L
	A <sub>1</sub>	E <sub>1</sub>	D <sub>1</sub>	A <sub>2</sub>	E <sub>2</sub>	D <sub>2</sub>			
IR-K05-1612	16	14	22	12	10	18	10	10	27
IR-K05-2012	20	17	27	12	10	18	10	10	35
IR-K05-2016	20	17	27	16	14	22	10	10	27
IR-K05-2512	25	22	32	12	10	18	10	10	40
IR-K05-2516	25	22	32	16	14	22	10	10	35
IR-K05-2520	25	22	32	20	17	27	10	10	27
IR-K05-3016	30	27	38	16	14	22	15	10	35
IR-K05-3020	30	27	38	20	17	27	15	10	34
IR-K05-3025	30	27	38	25	22	32	15	10	30
IR-K05-3820	38	34	45	20	17	27	15	10	45
IR-K05-3825	38	34	45	25	22	32	15	10	41
IR-K05-3830	38	34	45	30	27	38	15	15	36
IR-K05-4425	44.5	40	52	25	22	32	15	10	49
IR-K05-4430	44.5	40	52	30	27	38	15	15	44
IR-K05-4438	44.5	40	52	38	34	45	15	15	42
IR-K05-5730	57	51	55	30	27	38	15	15	50
IR-K05-5738	57	51	65	38	34	45	15	15	49
IR-K05-5744	57	51	65	44.5	40	52	15	15	48

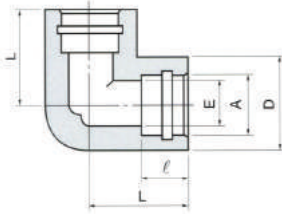
**IU**  
Union - 50K



Unit: mm

Designations	Pipe O.D.		D <sub>1</sub>	D <sub>2</sub>	H	S	l <sub>1</sub>	l <sub>2</sub>	L
	A <sub>1</sub>	E							
IU-K05-12	12	10	18	21	10	10	30	18	38
IU-K05-16	16	14	22	24	10	10	36	21	38
IU-K05-20	20	17	26	28	10	10	41	25	38
IU-K05-25	25	21	32	34	10	12	46	31	46
IU-K05-30	30	27	37	40	15	13	55	37	50
IU-K05-38	38	34	46	49	15	15	65	45	58
IU-K05-40	40	35	46	49	15	15	65	45	58
IU-K05-44	44.5	40	55	58	15	16	74	54	62
IU-K05-45	45	40	55	58	15	16	74	54	62
IU-K05-55	55	49	62	66	15	18	83	61	70
IU-K05-57	57	51	64	68	15	18	83	63	70

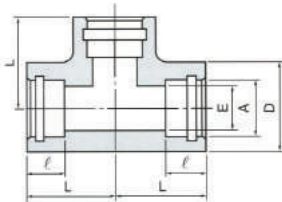
**IL**  
Elbow - 50K



Unit:mm

Designations	Pipe O.D. A	E	D	l	L
IL-K05-12	12	10	18	10	18
IL-K05-16	16	14	22	10	20
IL-K05-20	20	17	27	10	23
IL-K05-25	25	22	32	10	27
IL-K05-30	30	27	38	15	33
IL-K05-38	38	34	45	15	36
IL-K05-40	40	36	47	15	37
IL-K05-44	44.5	40	52	15	40
IL-K05-45	45	40	53	15	40
IL-K05-55	55	49	63	15	49
IL-K05-57	57	51	65	15	49

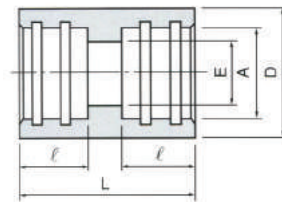
**IT**  
Tee - 50K



Unit:mm

Designations	Pipe O.D. A	E	D	l	L
IT-K05-12	12	10	18	10	18
IT-K05-16	16	14	22	10	20
IT-K05-20	20	17	27	10	23
IT-K05-25	25	22	32	10	27
IT-K05-30	30	27	38	15	33
IT-K05-38	38	34	45	15	36
IT-K05-40	40	36	47	15	37
IT-K05-44	44.5	40	52	15	40
IT-K05-45	45	40	53	15	40
IT-K05-55	55	49	63	15	49
IT-K05-57	57	51	65	15	49

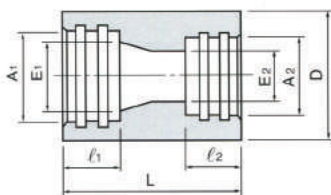
**IC**  
Coupling - 210K



Unit:mm

Designations	Pipe O.D. A	E	D	l	L
IC-K21-12	12	7	21	20	45
IC-K21-16	16	9	27	20	45
IC-K21-20	20	11	32	20	45
IC-K21-25	25	15	38	20	45
IC-K21-30	30	18	45	24	55
IC-K21-38	38	24	55	24	55
IC-K21-40	40	26	55	24	55
IC-K21-44	44.5	30	62	24	55
IC-K21-45	45	30	62	24	55
IC-K21-55	55	38	75	30	70
IC-K21-57	57	40	77	30	70

**IR**  
Reducer - 210K

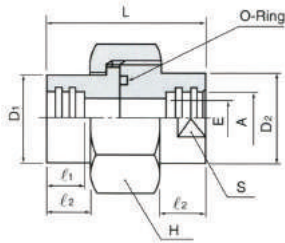


Unit:mm

Designations	Pipe O.D. A <sub>1</sub>	E <sub>1</sub>	Pipe O.D. A <sub>2</sub>	E <sub>2</sub>	D	l <sub>1</sub>	l <sub>2</sub>	L
IR-K21-1612	16	9	12	7	27	20	20	50
IR-K21-2012	20	11	12	7	32	20	20	50
IR-K21-2016	20	11	16	9	32	20	20	50
IR-K21-2512	25	15	12	7	38	20	20	50
IR-K21-2516	25	15	16	9	38	20	20	50
IR-K21-2520	25	15	20	11	38	20	20	50
IR-K21-3016	30	18	16	9	45	24	20	56
IR-K21-3020	30	18	20	11	45	24	20	56
IR-K21-3025	30	18	25	15	45	24	20	56
IR-K21-3820	38	24	20	11	55	24	20	56
IR-K21-3825	38	24	25	15	55	24	20	56
IR-K21-3830	38	24	30	18	55	24	24	60
IR-K21-4425	44.5	30	25	15	62	24	20	56
IR-K21-4430	44.5	30	30	18	62	24	24	60
IR-K21-4438	44.5	30	38	24	62	24	24	60
IR-K21-5730	57	40	30	18	75	30	24	70
IR-K21-5738	57	40	38	24	75	30	24	70
IR-K21-5744	57	40	44.5	30	75	30	24	70



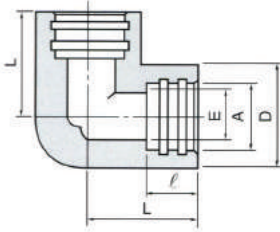
**IU**  
Union-210K



Unit: mm

Designations	Pipe O.D. A	E	D <sub>1</sub>	D <sub>2</sub>	H	S	l <sub>1</sub>	l <sub>2</sub>	L
IU-K21-12	12	8	22	24	36	21	15	12	42
IU-K21-16	16	10	26	28	41	25	16	13	44
IU-K21-20	20	12	31	34	46	31	16	12	46
IU-K21-25	25	15	37	40	55	37	18	13	50
IU-K21-30	30	20	46	49	65	45	20	14	56
IU-K21-38	38	24	55	58	74	54	24	18	66
IU-K21-40	40	26	55	58	74	54	24	18	66
IU-K21-44	44.5	30	61	65	83	60	24	19	68
IU-K21-45	45	30	61	65	83	60	24	19	68
IU-K21-55	55	38	75	79	100	73	30	22	80
IU-K21-57	57	40	76	80	100	74	30	22	80

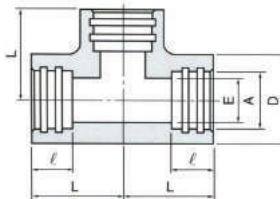
**IL**  
Elbow-210K



Unit: mm

Designations	Pipe O.D. A	E	D	l	L
IL-K21-12	12	7	21	15	26
IL-K21-16	16	9	27	16	30
IL-K21-20	20	11	32	16	32
IL-K21-25	25	15	38	18	37
IL-K21-30	30	18	45	20	42
IL-K21-38	38	24	55	24	48
IL-K21-40	40	26	55	24	48
IL-K21-44	44.5	30	62	24	58
IL-K21-45	45	30	62	24	58
IL-K21-55	55	38	75	30	68
IL-K21-57	57	40	77	30	68

**IT**  
Tee-210K

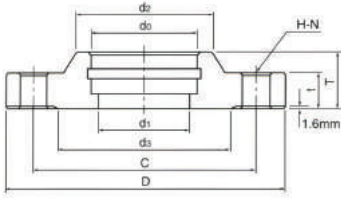


Unit: mm

Designations	Pipe O.D. A	E	D	l	L
IT-K21-12	12	7	21	15	26
IT-K21-16	16	9	27	16	30
IT-K21-20	20	11	32	16	32
IT-K21-25	25	15	38	18	37
IT-K21-30	30	18	45	20	42
IT-K21-38	38	24	55	24	48
IT-K21-40	40	26	55	24	48
IT-K21-44	44.5	30	62	24	58
IT-K21-45	45	30	62	24	58
IT-K21-55	55	38	75	30	68
IT-K21-57	57	40	77	30	68

## FLANGE

Class 150 & Class 300



### · Class 150

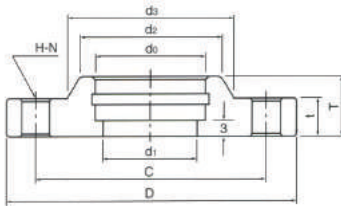
Nominal Size(in)	Tube O.D d <sub>0</sub>	D	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	t	T	C	H	N
1/2	16	89	14	21	30	9	21	60.3	1/2	4
3/4	25	98	22	31	38	8	24	69.8	1/2	4
1	30	108	27	36	49	9	24	79.4	1/2	4
1 1/4	38	117	35	44	59	11	26	88.9	1/2	4
1 1/2	44.5	127	41.5	51	65	11	26	98.4	1/2	4
2	57	152	54	67	78	13	28	120.6	5/8	4

### · Class 300

Nominal Size(in)	Tube O.D d <sub>0</sub>	D	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	t	T	C	H	N
1/2	16	95	14	21	38	9	21	66.7	5/8	4
3/4	25	117	22	31	48	11	27	82.6	3/4	4
1	30	124	27	36	54	11	27	88.9	3/4	4
1 1/4	38	134	35	44	64	12	28	98.4	3/4	4
1 1/2	44.5	156	41.5	51	70	13	28	114.3	7/8	4
2	57	165	54	67	84	13	28	127	3/4	8

## FLANGE

5Kg, 10Kg, 20Kg & 30Kg.f/cm<sup>2</sup>



ACTUAL USING RATING PRESSURE  
5Kg/cm<sup>2</sup>, 10Kg/cm<sup>2</sup>

### · 5kgf/cm<sup>2</sup>

Nominal Size(A)	Tube O.D d <sub>0</sub>	D	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	t	T	C	H	N	Silver-Ring
15	20	80	18	30	34	9	15	60	12	4	1×3
20	25	85	22	37	41	10	16	65	12	4	1×3
25	30	95	27	43	47	10	16	75	12	4	1×3
32	38	115	35	50	54	12	8	90	15	4	1×3
40	44.5	120	41.5	57	60	12	18	95	15	4	1×3

### · 10kgf/cm<sup>2</sup>

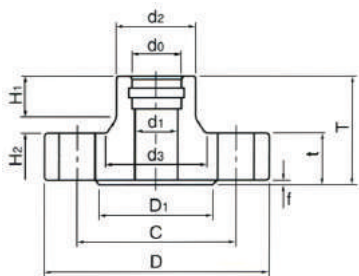
Nominal Size(A)	Tube O.D d <sub>0</sub>	D	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	t	T	C	H	N	Silver-Ring
15	20	95	18	30	34	12	16	70	15	4	1×3
20	25	100	22	37	41	14	18	75	15	4	1×3
25	30	125	27	43	47	14	18	90	19	4	1×3
32	38	135	35	50	54	16	20	100	19	4	1×3
40	44.5	140	41.5	57	60	16	20	105	19	4	1×3

### · 20kgf/cm<sup>2</sup>

Nominal Size(A)	Tube O.D d <sub>0</sub>	D	D <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	f	t	T	H <sub>1</sub>	H <sub>2</sub>	C	H	N	Silver-Ring
15	20	95	54	17	34	40	1	14	36	17	5	70	4	15	1×3
20	25	100	59	22	40	45	1	16	38	17	5	75	4	15	1×3
25	30	125	70	27	48	54	2	16	42	20	6	90	4	19	1×4
32	38	135	75	35	56	61	2	18	48	24	6	100	4	19	1×4
40	44.5	140	90	41.5	62	68	2	18	50	24	6	105	4	19	1×4

### · 30kgf/cm<sup>2</sup>

Nominal Size(A)	Tube O.D d <sub>0</sub>	D	D <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	f	t	T	H <sub>1</sub>	H <sub>2</sub>	C	H	N	Silver-Ring
15	20	115	55	17	36	40	1	18	45	19	8	80	4	19	1×4
20	25	120	60	22	42	46	1	18	45	19	8	85	4	19	1×4
25	30	130	70	27	50	54	2	20	50	22	8	95	4	19	1×5
32	38	140	75	35	60	64	2	22	53	23	8	105	4	19	1×5
40	44.5	160	90	41.5	66	70	2	22	56	26	8	120	4	23	1×5



ACTUAL USING RATING PRESSURE  
20Kg/cm<sup>2</sup>, 30Kg/cm<sup>2</sup>

# PIPE TYPE



## 1. Applicable pipe

- Stainless steel pipe, size 50A(2) and belows
- Carbon steel pipe, size 50A(2) and belows

## 2. Nominal pressure of fittings

- Ambient temp. : -30°C~40°C (see part A 4)

JIS	ANSI	Nominal pressure of fittings
Schedule 80	# 3,000	210kgf/cm <sup>2</sup>
Schedule 160	# 6,000	420kgf/cm <sup>2</sup>

- Remark. Test pressure of JIS pipe S80 is 120kgf/cm<sup>2</sup> and S160 is 200kgf/cm<sup>2</sup>

## 3. Materials for silver brazing type fittings

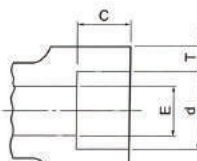
- JIS G4304 SUS304, SUS316
- JIS G3101 SS400
- JIS G3210 SF440A
- or equivalent materials of ASTM

## 4. Designation of pipe size

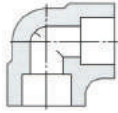
- Parallel pipe threads, JIS B0202, mark G, PF
- Taper pipe threads, JIS B0203, mark R, PT
- Metric fine screw threads, JIS B0207, mark M According to order
- American standard taper pipe threads, ANSI B 2.1 mark NPT
- Unified fine thread series, ANSI B 1.1, mark UNF

## 5. End dimensional data of ansi pipe fittings

Unit: mm

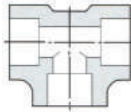
END PROFILE	Nominal size		$d_0^{+0.3}$	# 3,000		# 6,000		C min
	A	B		E	T min.	E	T min.	
	6	1/8	10.7	6.9	3.2	-	-	9.52
	8	1/4	14.1	9.3	3.3	-	-	
	10	3/8	17.5	12.5	3.5	-	-	
	15	1/2	21.7	15.8	4.1	11.8	5.2	
	20	3/4	27.1	20.9	4.55	15.6	6.05	12.7
	25	1	33.8	26.6	5.0	20.7	6.95	
	32	1 1/4	42.6	35.0	5.3	29.5	6.95	
	40	1 1/2	48.6	40.9	5.55	34.0	7.8	
	50	2	61.1	52.5	6.03	42.7	9.5	

**SWLA**  
90° Elbow



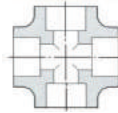
33

**SWTA**  
Tee



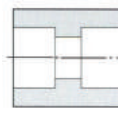
33

**SWXA**  
Cross



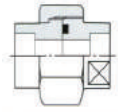
33

**SWFC**  
Full Coupling



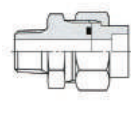
34

**SWUA**  
Union



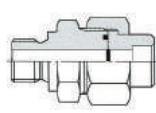
34

**SWMC-R**  
Male Connector



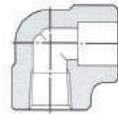
34

**SWMC-G**  
Male Connector



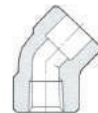
34

**SLD**  
90° Special Elbow



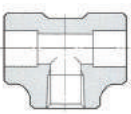
35

**SLE**  
45° Special Elbow



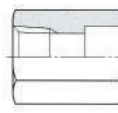
35

**STB**  
Special Tee



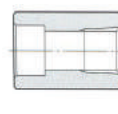
35

**SSB**  
Special Socket



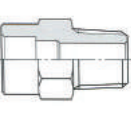
35

**SSC**  
Special Coupling



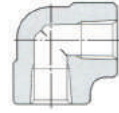
36

**SSD**  
S/W Male Adaptor



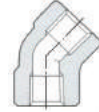
36

**SLA**  
90° Elbow



36

**SLB**  
45° Elbow



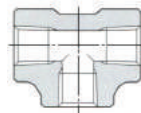
36

**SLC**  
Street Elbow



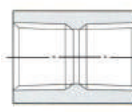
37

**STA**  
Tee



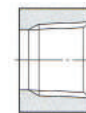
37

**SFC**  
Full Coupling



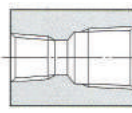
37

**SHC**  
Half Coupling



37

**SRC**  
Reducing Coupling



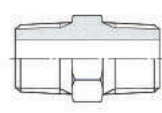
38

**SCA**  
Cap



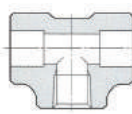
38

**SNA**  
Hex Nipple



38

**SNR**  
Reducing Nipple



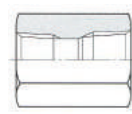
39

**SSA**  
Hex Socket



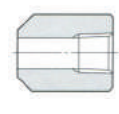
39

**SSR**  
Reducing Scket



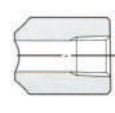
39

**SBA**  
Boss Type A



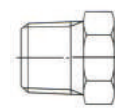
40

**SBR**  
Boss Type R



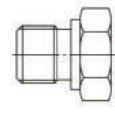
40

**SPB**  
Hex Head Plug



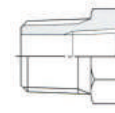
40

**SPC**  
Hex Head Plug



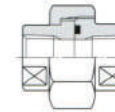
40

**SHB**  
Hex Bushing



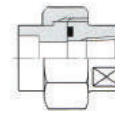
41

**SUA**  
Union Type A



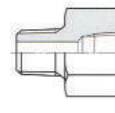
41

**SUB**  
Union Type B



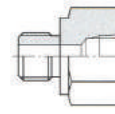
41

**MFAA**  
Male/Female Adaptor  
Type A



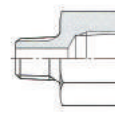
41

**MFAB**  
Male/Female Adaptor  
Type B



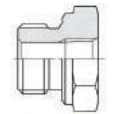
42

**MFAC**  
Male/Female Adaptor  
Type C



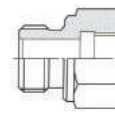
42

**MFAD**  
Male/Female Adaptor  
Type D



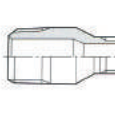
42

**MFAE**  
Male/Female Adaptor  
Type E



43

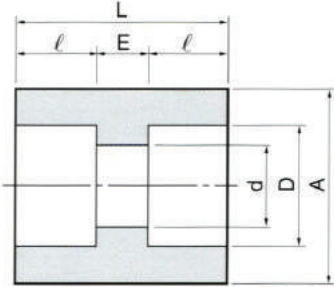
**MSS-SP-95**  
Swaged Nipple



43

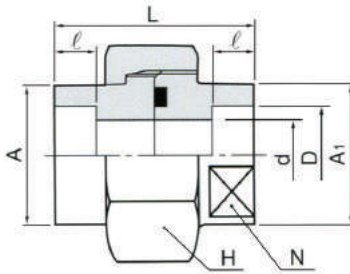


**SWLA**  
90° Elbow



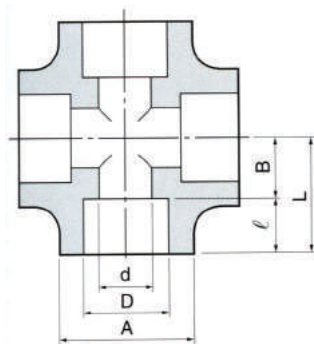
Designations	Nom. Size	D	l	d	A	B	L
<b>Sch. 80</b>							
SWLA02-S80	1/4	14.3	11.4	9.4	23	11.1	22.5
SWLA03-S80	3/8	17.8	11.5	12.7	26	13.5	25
SWLA04-S80	1/2	22.2	13.1	16.1	33	15.9	29
SWLA06-S80	3/4	27.7	14.9	21.4	39	19.1	34
SWLA08-S80	1	34.5	15.8	27.2	47	22.2	38
SWLA10-S80	1 1/4	43.2	18.0	35.5	57	27.0	45
SWLA12-S80	1 1/2	49.1	19.2	41.2	63	31.8	51
SWLA16-S80	2	61.1	21.9	52.7	76	38.1	60
<b>Sch. 160</b>							
SWLA04-S160	1/2	22.2	14.9	12.3	39	19.1	34
SWLA06-S160	3/4	27.7	15.8	16.2	47	22.2	38
SWLA08-S160	1	34.5	18.0	21.2	57	27.0	45
SWLA10-S160	1 1/4	43.2	19.2	29.9	63	31.8	51
SWLA12-S160	1 1/2	49.1	21.9	34.4	76	38.1	60
SWLA16-S160	2	61.1	25.7	43.1	96	41.3	67

**SWTA**  
Tee



Designations	Nom. Size	D	l	d	A	B	L
<b>Sch. 80</b>							
SWTA02-S80	1/4	14.3	11.4	9.4	23	11.1	22.5
SWTA03-S80	3/8	17.8	11.5	12.7	26	13.5	25
SWTA04-S80	1/2	22.2	13.1	16.1	33	15.9	29
SWTA06-S80	3/4	27.7	14.9	21.4	39	19.1	34
SWTA08-S80	1	34.5	15.8	27.2	47	22.2	38
SWTA10-S80	1 1/4	43.2	18.0	35.5	57	27.0	45
SWTA12-S80	1 1/2	49.1	19.2	41.2	63	31.8	51
SWTA16-S80	2	61.1	21.9	52.7	76	38.1	60
<b>Sch. 160</b>							
SWTA04-S160	1/2	22.2	14.9	12.3	39	19.1	34
SWTA06-S160	3/4	27.7	15.8	16.2	47	22.2	38
SWTA08-S160	1	34.5	18.0	21.2	57	27.0	45
SWTA10-S160	1 1/4	43.2	19.2	29.9	63	31.8	51
SWTA12-S160	1 1/2	49.1	21.9	34.4	76	38.1	60
SWTA16-S160	2	61.1	25.7	43.1	96	41.3	67

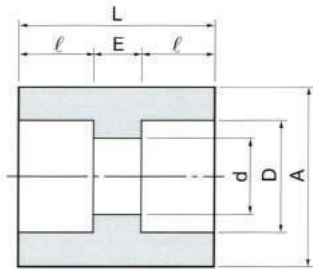
**SWXA**  
Cross



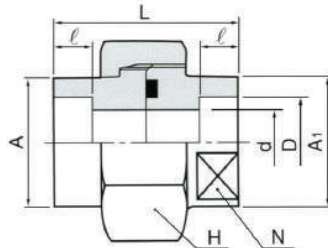
Designations	Nom. Size	D	l	d	A	B	L
<b>Sch. 80</b>							
SWXA02-S80	1/4	14.3	11.4	9.4	23	11.1	22.5
SWXA03-S80	3/8	17.8	11.5	12.7	26	13.5	25
SWXA04-S80	1/2	22.2	13.1	16.1	33	15.9	29
SWXA06-S80	3/4	27.7	14.9	21.4	39	19.1	34
SWXA08-S80	1	34.5	15.8	27.2	47	22.2	38
SWXA10-S80	1 1/4	43.2	18.0	35.5	57	27.0	45
SWXA12-S80	1 1/2	49.1	19.2	41.2	63	31.8	51
SWXA16-S80	2	61.1	21.9	52.7	76	38.1	60
<b>Sch. 160</b>							
SWXA04-S160	1/2	22.2	14.9	12.3	39	19.1	34
SWXA06-S160	3/4	27.7	15.8	16.2	47	22.2	38
SWXA08-S160	1	34.5	18.0	21.2	57	27.0	45
SWXA10-S160	1 1/4	43.2	19.2	29.9	63	31.8	51
SWXA12-S160	1 1/2	49.1	21.9	34.4	76	38.1	60
SWXA16-S160	2	61.1	25.7	43.1	96	41.3	67

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

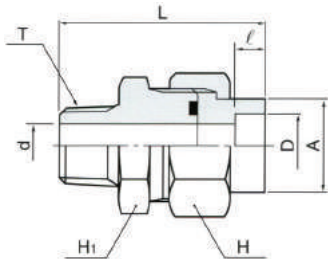
**SWFC**  
Full Coupling



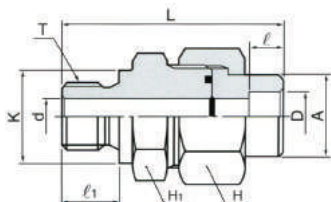
**SWUA**  
Union



**SWMC-R**  
Male Connector



**SWMC-G**  
Male Connector



Designations	Nom. Size	D	l	d	A	E	L
<b>Sch. 80</b>							
SWFC02-S80	1/4	14.3	10	9.4	22	6.4	26.4
SWFC03-S80	3/8	17.8	10	12.7	25	6.4	26.4
SWFC04-S80	1/2	22.2	10	16.1	32	9.5	29.5
SWFC06-S80	3/4	27.7	13	21.4	38	9.5	35.5
SWFC08-S80	1	34.5	13	27.2	45	12.7	38.7
SWFC10-S80	1 1/4	43.2	13	35.5	55	12.7	38.7
SWFC12-S80	1 1/2	49.1	13	41.2	63	12.7	38.7
SWFC16-S80	2	61.1	16	52.7	75	19.1	51.1

<b>Sch. 160</b>							
SWFC04-S160	1/2	22.2	13	12.3	34	9.5	35.5
SWFC06-S160	3/4	27.7	13	16.2	42	9.5	35.5
SWFC08-S160	1	34.5	13	21.2	52	12.7	38.7
SWFC10-S160	1 1/4	43.2	13	29.9	60	12.7	38.7
SWFC12-S160	1 1/2	49.1	16	34.4	68	12.7	44.7
SWFC16-S160	2	61.1	16	43.1	85	19.1	51.1

Designations	Nom. Size	D	l	d	A	A <sub>1</sub>	N	L	H	O-ring
SWUA02	1/4	14.3	10	9.4	22	24	21	38	HEX36	P18
SWUA03	3/8	17.8	10	12.7	27	29	26	38	HEX41	P20
SWUA04	1/2	22.2	10	16.1	32	35	32	44	HEX46	G25
SWUA06	3/4	27.7	13	21.4	37	41	37	50	HEX55	G30
SWUA08	1	34.5	13	27.2	44	47	44	56	HEX60	G35
SWUA10	1 1/4	43.2	13	35.5	54	54	51	60	OCT75	G45
SWUA12	1 1/2	49.1	13	41.2	63	65	60	72	OCT85	G50
SWUA16	2	61.1	16	52.7	76	80	75	72	OCT94	G65

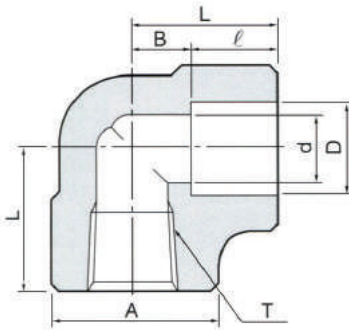
Designations	Nom. Size	D	l	d	A	L	H	H <sub>1</sub>	T R(PT)	O-ring
SWMC02-02R	1/4	14.3	10	7	22	54	HEX36	HEX30	1/4	P18
SWMC02-03R	1/4	14.3	10	9	22	55	HEX36	HEX30	3/8	P18
SWMC03-03R	3/8	17.8	10	9	27	56	HEX41	HEX36	3/8	P20
SWMC03-04R	3/8	17.8	10	12	27	56	HEX41	HEX36	1/2	P20
SWMC04-04R	1/2	22.2	10	12	32	60	HEX46	HEX41	1/2	G25
SWMC04-06R	1/2	22.2	10	16	32	66	HEX46	HEX41	3/4	G25
SWMC06-06R	3/4	27.7	13	16	37	72	HEX55	HEX46	3/4	G30
SWMC06-08R	3/4	27.7	13	20	37	75	HEX55	HEX46	1	G30
SWMC08-08R	1	34.5	13	20	44	82	HEX60	HEX55	1	G35
SWMC08-10R	1	34.5	13	25	44	84	HEX60	HEX55	1 1/4	G35
SWMC10-10R	1 1/4	43.2	13	25	54	90	OCT75	OCT65	1 1/4	G45
SWMC10-12R	1 1/4	43.2	13	32	54	91	OCT75	OCT65	1 1/2	G45
SWMC12-12R	1 1/2	49.1	13	32	63	99	OCT85	OCT74	1 1/2	G50
SWMC12-16R	1 1/2	49.1	13	38	63	103	OCT85	OCT74	2	G50
SWMC16-16R	2	61.1	16	38	76	103	OCT94	OCT86	2	G65

Designations	Nom. Size	D	l	d	K	A	l <sub>1</sub>	L	H	H <sub>1</sub>	T R(PT)	O-ring
SWMC02-02G	1/4	14.3	10	7	18	22	12	54	HEX36	HEX30	1/4	P18
SWMC03-03G	1/4	14.3	10	9	21.5	22	12	55	HEX36	HEX30	3/8	P18
SWMC03-03G	3/8	17.8	10	9	21.5	27	12	55	HEX41	HEX36	3/8	P20
SWMC03-04G	3/8	17.8	10	12	25.5	27	14	57	HEX41	HEX36	1/2	P20
SWMC04-04G	1/2	22.2	10	12	25.5	32	14	61	HEX46	HEX41	1/2	G25
SWMC04-06G	1/2	22.2	10	16	31.5	32	16	63	HEX46	HEX41	3/4	G25
SWMC06-06G	3/4	27.7	13	16	31.5	37	16	69	HEX55	HEX46	3/4	G30
SWMC06-08G	3/4	27.7	13	20	38	37	18	73	HEX55	HEX46	1	G30
SWMC08-08G	1	34.5	13	20	38	44	18	78	HEX60	HEX55	1	G35
SWMC08-10G	1	34.5	13	25	48.5	44	20	80	HEX60	HEX55	1 1/4	G35
SWMC10-10G	1 1/4	43.2	13	25	48.5	54	20	84	OCT75	OCT65	1 1/4	G45
SWMC10-12G	1 1/4	43.2	13	32	53.5	54	22	86	OCT75	OCT65	1 1/2	G45
SWMC12-12G	1 1/2	49.1	13	32	53.5	63	22	98	OCT85	OCT74	1 1/2	G50
SWMC12-16G	1 1/2	49.1	13	38	66	63	24	99	OCT85	OCT74	2	G50
SWMC16-16G	2	61.1	16	38	66	76	24	103	OCT94	OCT86	2	G65

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SLD**

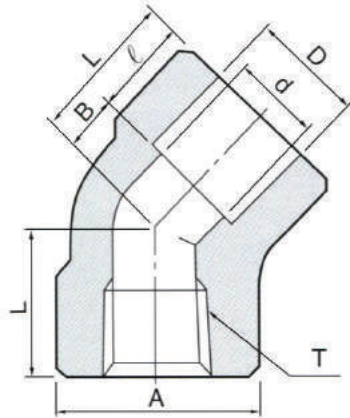
90° Special Elbow



Designations	Nom. Size	D	l	d	A	B	L	T R(PT)
SLD-02WR	1/4	14.3	11.4	9.4	23	11.1	22.5	1/4
SLD-03WR	3/8	17.8	11.5	12.7	26	13.5	25	3/8
SLD-04WR	1/2	22.2	13.1	16.1	33	15.9	29	1/2
SLD-06WR	3/4	27.7	14.9	21.4	39	19.1	34	3/4
SLD-08WR	1	34.5	15.8	27.2	47	22.2	38	1
SLD-10WR	1 1/4	43.2	18.0	35.5	57	27.0	45	1 1/4
SLD-12WR	1 1/2	49.1	19.2	41.2	63	31.8	51	1 1/2
SLD-16WR	2	61.1	21.9	52.7	76	38.1	60	2

**SLE**

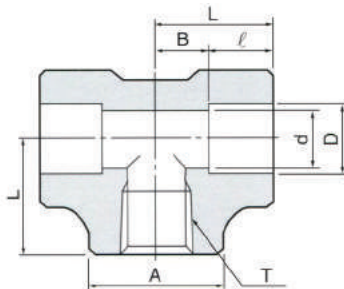
45° Special Elbow



Designations	Nom. Size	D	l	d	A	B	L	T R(PT)
SLE-02WR	1/4	14.3	12.1	9.4	23	7.9	20	1/4
SLE-03WR	3/8	17.8	13.1	12.7	26	7.9	21	3/8
SLE-04WR	1/2	22.2	12.9	16.1	33	11.1	24	1/2
SLE-06WR	3/4	27.7	14.8	21.4	39	12.7	27.5	3/4
SLE-08WR	1	34.5	15.7	27.2	47	14.3	30	1
SLE-10WR	1 1/4	43.2	18.5	35.5	57	17.5	36	1 1/4
SLE-12WR	1 1/2	49.1	19.4	41.2	63	20.6	40	1 1/2
SLE-16WR	2	61.1	21.6	52.7	76	25.4	47	2

**STB**

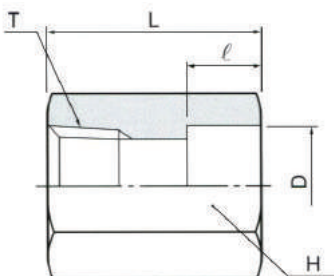
Special Tee



Designations	Nom. Size	D	l	d	A	B	L	T R(PT)
STB-02WR	1/4	14.3	11.4	9.4	23	23	22.5	1/4
STB-03WR	3/8	17.8	11.5	12.7	26	26	25	3/8
STB-04WR	1/2	22.2	13.1	16.1	33	33	29	1/2
STB-06WR	3/4	27.7	14.9	21.4	39	39	34	3/4
STB-08WR	1	34.5	15.8	27.2	47	47	38	1
STB-10WR	1 1/4	43.2	18.0	35.5	57	57	45	1 1/4
STB-12WR	1 1/2	49.1	19.2	41.2	63	63	51	1 1/2
STB-16WR	2	61.1	21.6	52.7	76	72	60	2

**SSB**

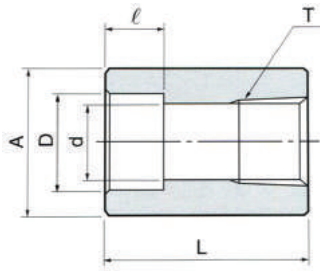
Special Socket



Designations	Nom. Size	D	l	L	H	T R(PT)
SSB-02WR	1/4	14.3	10	30	HEX22	1/4
SSB-03WR	3/8	17.8	10	30	HEX27	3/8
SSB-04WR	1/2	22.2	10	40	HEX32	1/2
SSB-06WR	3/4	27.7	13	43	HEX41	3/4
SSB-08WR	1	34.5	13	50	HEX46	1
SSB-10WR	1 1/4	43.2	13	55	HEX55	1 1/4
SSB-12WR	1 1/2	49.1	13	55	HEX65	1 1/2
SSB-16WR	2	61.1	16	64	HEX75	2

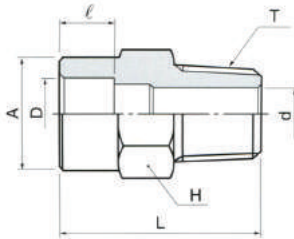
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SSC**  
Special Coupling



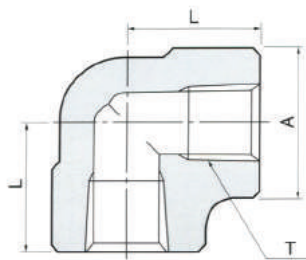
Designations	Nom. Size	D	l	d	A	L	T R(PT)
SSC-02WR	1/4	14.3	10	9.4	22	30	1/4
SSC-03WR	3/8	17.8	10	12.7	25	30	3/8
SSC-04WR	1/2	22.2	10	16.1	32	40	1/2
SSC-06WR	3/4	27.2	13	21.4	38	43	3/4
SSC-08WR	1	34.5	13	27.2	45	50	1
SSC-10WR	1 1/4	43.2	13	35.5	55	55	1 1/4
SSC-12WR	1 1/2	49.1	13	41.2	63	55	1 1/2
SSC-16WR	2	61.1	16	52.7	75	64	2

**SSD**  
S/W Male Adaptor



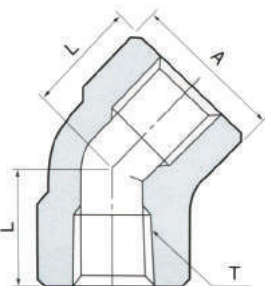
Designations	Nom. Size	D	l	d	A	L	H	T R(PT)
SSD-02WR	1/4	14.3	10	7	22	30	22	1/4
SSD-03WR	3/8	17.8	10	9	27	33	27	3/8
SSD-04WR	1/2	22.2	10	12	32	35	32	1/2
SSD-06WR	3/4	27.7	13	16	38	40	41	3/4
SSD-08WR	1	34.5	13	20	44	43	46	1
SSD-10WR	1 1/4	43.2	13	25	54	45	55	1 1/4
SSD-12WR	1 1/2	49.1	13	32	63	47	65	1 1/2
SSD-16WR	2	61.1	16	38	74	56	75	2

**SLA**  
90° Elbow



Designations	T R(PT)	A	L
SLA-01R	1/8	23	22.5
SLA-02R	1/4	23	22.5
SLA-03R	3/8	26	25
SLA-04R	1/2	33	29
SLA-06R	3/4	39	34
SLA-08R	1	47	38
SLA-10R	1 1/4	57	45
SLA-12R	1 1/2	63	51
SLA-16R	2	76	60

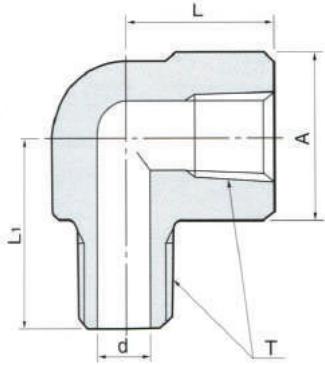
**SLB**  
45° Elbow



Designations	T R(PT)	A	L
SLB-01R	1/8	23	20
SLB-02R	1/4	23	20
SLB-03R	3/8	26	21
SLB-04R	1/2	33	24
SLB-06R	3/4	39	27.5
SLB-08R	1	47	30
SLB-10R	1 1/4	57	36
SLB-12R	1 1/2	63	40
SLB-16R	2	76	47

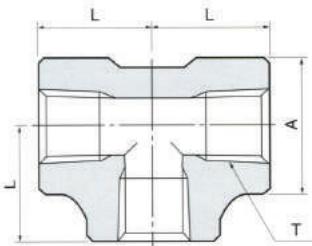
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SLC**  
Street Elbow



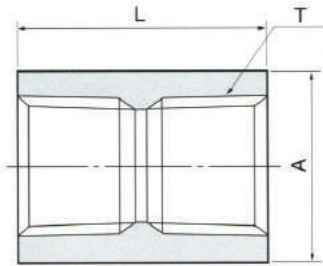
Designations	T R(PT)	d	A	L	L <sub>1</sub>
SLC-02R	1/4	7	19	24	27
SLC-03R	3/8	9	24	24	29
SLC-04R	1/2	12	30	27	36
SLC-06R	3/4	16	36	32	42
SLC-08R	1	20	46	45	57
SLC-10R	1 1/4	28	55	55	62
SLC-12R	1 1/2	32	60	60	68
SLC-16R	2	40	76	46	72

**STA**  
Tee



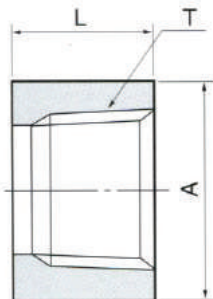
Designations	T R(PT)	A	L
STA-01R	1/8	23	22.5
STA-02R	1/4	23	22.5
STA-03R	3/8	26	25
STA-04R	1/2	33	29
STA-06R	3/4	39	34
STA-08R	1	47	38
STA-10R	1 1/4	57	45
STA-12R	1 1/2	63	51
STA-16R	2	76	60

**SFC**  
Full Coupling



Designations	T R(PT)	A	L
SFC-01R	1/8	16	31.8
SFC-02R	1/4	20	35.1
SFC-03R	3/8	24	38.1
SFC-04R	1/2	30	47.8
SFC-06R	3/4	36	50.8
SFC-08R	1	46	60.5
SFC-10R	1 1/4	60	66.5
SFC-12R	1 1/2	65	79.3
SFC-16R	2	80	85.9

**SHC**  
Half Coupling

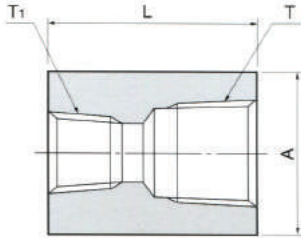


Designations	T R(PT)	A	L
SHC-01R	1/8	16	15.9
SHC-02R	1/4	20	17.6
SHC-03R	3/8	24	19.1
SHC-04R	1/2	30	23.9
SHC-06R	3/4	36	25.4
SHC-08R	1	46	30.3
SHC-10R	1 1/4	60	33.3
SHC-12R	1 1/2	65	39.7
SHC-16R	2	80	43.0

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

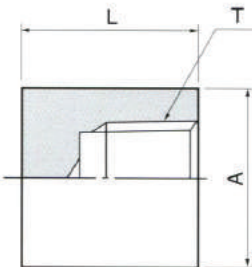


**SRC**  
Reducing Coupling



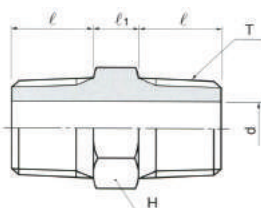
Designations	T R(PT)	X	T <sub>1</sub> R(PT)	A	L
SRC02-01R	1/4	X	1/8	20	35.1
SRC03-02R	3/8	X	1/4	24	38.1
SRC04-02R	1/2	X	1/4	30	47.8
SRC04-03R	1/2	X	3/8	30	47.8
SRC06-02R	3/4	X	1/4	36	50.8
SRC06-03R	3/4	X	3/8	36	50.8
SRC06-04R	3/4	X	1/2	36	50.8
SRC08-03R	1	X	3/8	45	60.5
SRC08-04R	1	X	1/2	45	60.5
SRC08-06R	1	X	3/4	45	60.5
SRC10-04R	1 1/4	X	1/2	60	66.5
SRC10-06R	1 1/4	X	3/4	60	66.5
SRC10-08R	1 1/4	X	1	60	66.5
SRC12-06R	1 1/2	X	3/4	65	79.3
SRC12-08R	1 1/2	X	1	65	79.3
SRC12-12R	1 1/2	X	1 1/4	65	79.3
SRC16-08R	2	X	1	80	85.9
SRC16-10R	2	X	1 1/4	80	85.9

**SCA**  
Cap



Designations	T R(PT)	A	L
SCA-01R	1/8	16	19.1
SCA-02R	1/4	20	25.4
SCA-03R	3/8	24	25.4
SCA-04R	1/2	30	31.8
SCA-06R	3/4	36	36.6
SCA-08R	1	45	41.1
SCA-10R	1 1/4	60	44.5
SCA-12R	1 1/2	65	47.8
SCA-16R	2	80	60.5

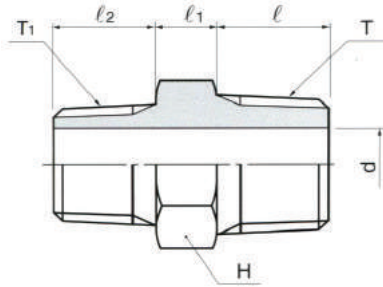
**SNA**  
Hex Nipple



Designations	T R(PT)	d	H	l	l <sub>1</sub>
SNA-01R	1/8	4	HEX12	10	6
SNA-02R	1/4	7	HEX14	14	8
SNA-03R	3/8	9	HEX17	16	8
SNA-04R	1/2	12	HEX22	18	9
SNA-06R	3/4	16	HEX27	20	10
SNA-08R	1	20	HEX36	22	11
SNA-10R	1 1/4	28	HEX46	24	12
SNA-12R	1 1/2	32	HEX50	26	14
SNA-16R	2	40	HEX65	30	16

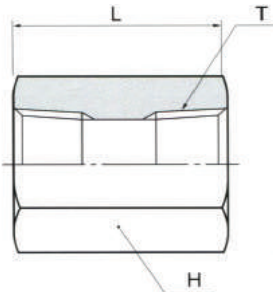
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SNR**  
Reducing Nipple



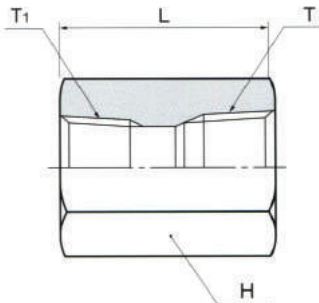
Designations	T R(PT)	X	T <sub>1</sub> R(PT)	d	H	l	l <sub>1</sub>	l <sub>2</sub>
SNR02-01R	1/4	X	1/8	4	HEX14	14	8	10
SNR03-02R	3/8	X	1/4	7	HEX17	16	8	14
SNR04-02R	1/2	X	1/4	7	HEX22	18	9	14
SNR04-03R	1/2	X	3/8	9	HEX22	18	9	16
SNR06-02R	3/4	X	1/4	7	HEX27	20	10	14
SNR06-03R	3/4	X	3/8	9	HEX27	20	10	16
SNR06-04R	3/4	X	1/2	12	HEX27	20	10	18
SNR08-03R	1	X	3/8	9	HEX36	22	11	15
SNR08-04R	1	X	1/2	12	HEX36	22	11	18
SNR08-06R	1	X	3/4	16	HEX36	22	11	20
SNR10-04R	1 1/4	X	1/2	12	HEX46	24	12	18
SNR10-06R	1 1/4	X	3/4	16	HEX46	24	12	20
SNR10-08R	1 1/4	X	1	20	HEX46	24	12	22
SNR12-06R	1 1/2	X	3/4	16	HEX50	26	14	20
SNR12-08R	1 1/2	X	1	20	HEX50	26	14	22
SNR12-10R	1 1/4	X	1 1/4	28	HEX50	26	14	24
SNR16-08R	2	X	1	20	HEX65	30	16	22
SNR16-10R	2	X	1 1/4	28	HEX65	30	16	24
SNR16-12R	2	X	1/2	32	HEX65	30	16	26

**SSA**  
Hex Socket



Designations	T R(PT)	H	L
SSA-01R	1/8	HEX17	30
SSA-02R	1/4	HEX22	30
SSA-03R	3/8	HEX24	30
SSA-04R	1/2	HEX30	40
SSA-06R	3/4	HEX36	42
SSA-08R	1	HEX46	50
SSA-10R	1 1/4	HEX55	55
SSA-12R	1 1/2	HEX65	55
SSA-16R	2	HEX75	64

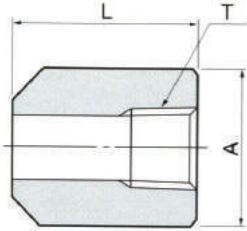
**SSR**  
Reducing Socket



Designations	T R(PT)	X	T <sub>1</sub> R(PT)	H	L
SSR02-01R	1/4	X	1/8	HEX22	30
SSR03-02R	3/8	X	1/4	HEX24	30
SSR04-02R	1/2	X	1/4	HEX30	40
SSR04-03R	1/2	X	3/8	HEX30	40
SSR06-02R	3/4	X	1/4	HEX36	42
SSR06-03R	3/4	X	3/8	HEX36	42
SSR06-04R	3/4	X	1/2	HEX36	42
SSR08-03R	1	X	3/4	HEX46	50
SSR08-04R	1	X	1/2	HEX46	50
SSR08-06R	1	X	3/4	HEX46	50
SSR10-04R	1 1/4	X	1/2	HEX55	55
SSR10-06R	1 1/4	X	3/4	HEX55	55
SSR10-08R	1 1/4	X	1	HEX55	55
SSR12-06R	1 1/2	X	3/4	HEX60	55
SSR12-08R	1 1/2	X	1	HEX60	55
SSR12-10R	1 1/2	X	1 1/4	HEX60	55
SSR16-08R	2	X	1	HEX75	64
SSR16-10R	2	X	1 1/4	HEX75	64
SSR16-12R	2	X	1 1/2	HEX75	64

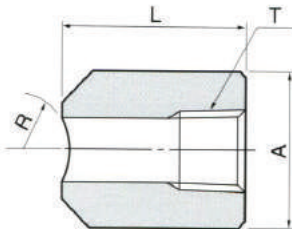
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SBA**  
Boss Type A



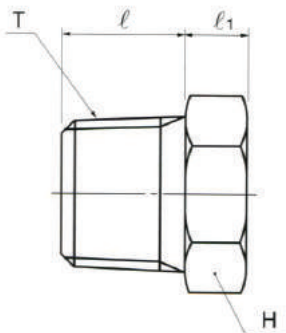
Designations	T R(PT)	A	L
SBA-02R	1/4	22	40
SBA-03R	3/8	25	50
SBA-04R	1/2	32	50
SBA-06R	3/4	38	50
SBA-08R	1	45	50
SBA-10R	1 1/4	55	50
SBA-12R	1 1/2	65	50
SBA-16R	2	75	60

**SBR**  
Boss Type R



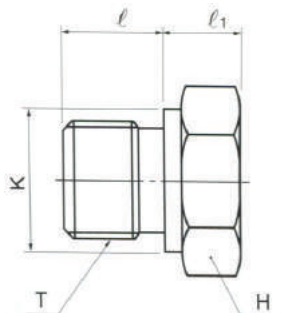
Designations	T R(PT)	A	L	R
SBR-02R	1/4	22	40	25
SBR-03R	3/8	25	50	25
SBR-04R	1/2	32	50	30
SBR-06R	3/4	38	50	30
SBR-08R	1	45	50	40
SBR-10R	1 1/4	55	50	45
SBR-12R	1 1/2	65	50	55
SBR-16R	2	75	60	60

**SPB**  
Hex Head Plug



Designations	T R(PT)	H	l	l <sub>1</sub>
SPB-02R	1/4	HEX17	14	8
SPB-03R	3/8	HEX19	15	8
SPB-04R	1/2	HEX22	19	9
SPB-06R	3/4	HEX27	21	10
SPB-08R	1	HEX36	24	11
SPB-10R	1 1/4	HEX46	27	12
SPB-12R	1 1/2	HEX50	27	14
SPB-16R	2	HEX65	31	16

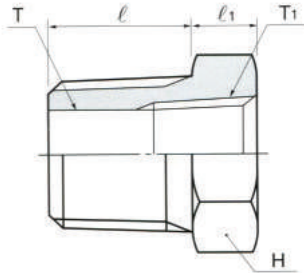
**SPC**  
Hex Head Plug



Designations	T R(PT)	l	l <sub>1</sub>	K	H	O-ring
SPC-01G	1/8	8	7	14	HEX14	P 8
SPC-02G	1/4	12	9	19	HEX19	P11
SPC-03G	3/8	12	10	22	HEX22	P14
SPC-04G	1/2	14	13	27	HEX27	P18
SPC-06G	3/4	16	16	36	HEX36	P24
SPC-08G	1	18	18	41	HEX41	P29
SPC-10G	1 1/4	20	21	50	HEX46	P38
SPC-12G	1 1/2	21	21	55	HEX50	P44
SPC-16G	2	25	23	75	HEX65	P56

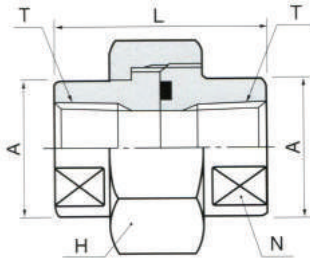
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**SHB**  
Hex Bushing



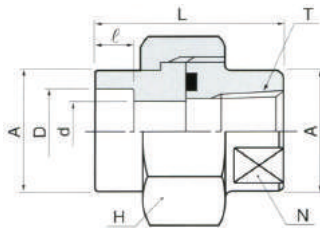
Designations	T R(PT)	X	T <sub>1</sub> R(PT)	H	l	l <sub>1</sub>
SHB02-01R	1/4	X	1/8	HEX14	14	8
SHB03-02R	3/8	X	1/4	HEX17	15	8
SHB04-02R	1/2	X	1/4	HEX22	19	9
SHB04-03R	1/2	X	3/8	HEX22	19	9
SHB06-02R	3/4	X	1/4	HEX27	21	10
SHB06-03R	3/4	X	3/8	HEX27	21	10
SHB06-04R	3/4	X	1/2	HEX27	21	10
SHB08-02R	1	X	1/4	HEX36	24	11
SHB08-03R	1	X	3/8	HEX36	24	11
SHB08-04R	1	X	1/2	HEX36	24	11
SHB08-06R	1	X	3/4	HEX36	24	11
SHB10-04R	1 1/4	X	1/2	HEX46	27	12
SHB10-06R	1 1/4	X	3/4	HEX46	27	12
SHB10-08R	1 1/4	X	1	HEX46	27	12
SHB12-04R	1 1/2	X	1/2	HEX50	27	14
SHB12-06R	1 1/2	X	3/4	HEX50	27	14
SHB12-08R	1 1/2	X	1	HEX50	27	14
SHB12-10R	1 1/2	X	1 1/4	HEX50	27	14
SHB16-06R	2	X	3/4	HEX65	31	16
SHB16-08R	2	X	1	HEX65	31	16
SHB16-10R	2	X	1 1/4	HEX65	31	16
SHB16-12R	2	X	1 1/2	HEX65	31	16

**SUA**  
Union Type A



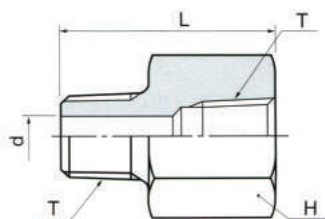
Designations	T R(PT)	A	N	L	H	O-ring
SUA-02R	1/4	22	19	38	HEX36	P18
SUA-03R	3/8	27	24	38	HEX41	P20
SUA-04R	1/2	32	29	44	HEX46	G25
SUA-06R	3/4	37	34	50	HEX55	G30
SUA-08R	1	44	41	56	HEX60	G35
SUA-10R	1 1/4	54	51	60	OCT75	G45
SUA-12R	1 1/2	63	60	72	OCT85	G50
SUA-16R	2	76	71	72	OCT94	G65

**SUB**  
Union Type B



Designations	Nom. Size	D	l	d	A	L	N	H	T R(PT)	O-ring
SUB-02WR	1/4	14.3	10	9.4	22	38	19	HEX36	1/4	P18
SUB-03WR	3/8	17.8	10	12.7	27	38	24	HEX41	3/8	P20
SUB-04WR	1/2	22.2	10	16.1	32	44	29	HEX46	1/2	G25
SUB-06WR	3/4	27.7	13	21.4	37	50	34	HEX55	3/4	G30
SUB-08WR	1	34.5	13	27.2	44	56	41	HEX60	1	G35
SUB-10WR	1 1/4	43.2	13	35.5	54	60	51	OCT75	1 1/4	G45
SUB-12WR	1 1/2	49.1	13	41.2	63	72	60	OCT85	1 1/2	G50
SUB-16WR	2	61.1	16	52.7	76	72	71	OCT94	2	G65

**MFAA**  
Male/Female Adaptor Type A

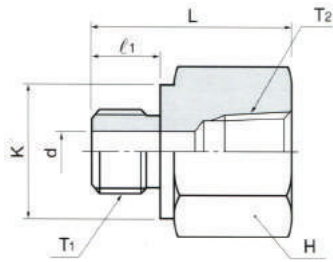


Designations	T R(PT)	d	L	H
MFAA-02R	1/4	17	33	HEX22
MFAA-03R	3/8	9	36	HEX24
MFAA-04R	1/2	12	45	HEX30
MFAA-06R	3/4	16	50	HEX36
MFAA-08R	1	20	58	HEX46
MFAA-10R	1 1/4	28	67	HEX55
MFAA-12R	1 1/2	32	69	HEX65
MFAA-16R	2	40	79	HEX75

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

**MFAB**

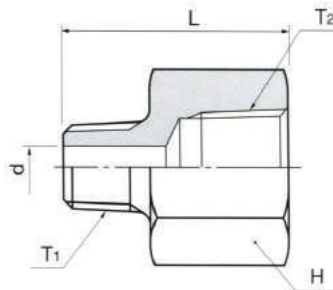
Male/Female Adaptor Type B



Designations	T <sub>1</sub> G(PF)	T <sub>2</sub> G(PF)	d	K	l <sub>1</sub>	L	H
MFAB-02GR	1/4	1/4	6	19	12	33	HEX22
MFAB-03GR	3/8	3/8	8	22	12	35	HEX24
MFAB-04GR	1/2	1/2	12	27	14	42	HEX30
MFAB-06GR	3/4	3/4	16	36	16	47	HEX36
MFAB-08GR	1	1	22	41	18	55	HEX46
MFAB-10GR	1 1/4	1 1/4	28	50	20	63	HEX55
MFAB-12GR	1 1/2	1 1/2	31	55	21	66	HEX65
MFAB-16GR	2	2	36	75	25	76	HEX75

**MFAC**

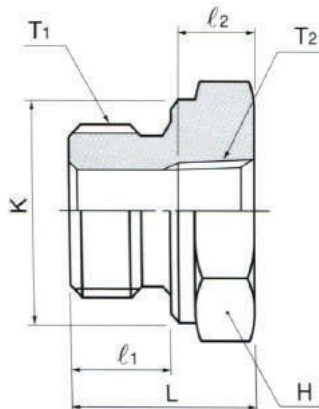
Male/Female Adaptor Type C



Designations	T <sub>1</sub> R(PT)	X	T <sub>2</sub> R(PT)	d	L	H
MFAC01-02R	1/8	X	1/4	4	30	HEX22
MFAC01-03R	1/8	X	3/8	4	31	HEX24
MFAC02-03R	1/4	X	3/8	7	35	HEX24
MFAC02-04R	1/4	X	1/2	7	39	HEX30
MFAC02-06R	1/4	X	3/4	7	42	HEX36
MFAC03-04R	3/8	X	1/2	9	41	HEX30
MFAC03-06R	3/8	X	3/4	9	44	HEX36
MFAC03-08R	3/8	X	1	9	47	HEX46
MFAC04-06R	1/2	X	3/4	12	48	HEX36
MFAC04-08R	1/2	X	1	12	52	HEX46
MFAC04-10R	1/2	X	1 1/4	12	56	HEX55
MFAC06-08R	3/4	X	1	16	55	HEX46
MFAC06-10R	3/4	X	1 1/4	16	59	HEX55
MFAC06-12R	3/4	X	1 1/2	16	60	HEX60
MFAC08-10R	1	X	1 1/4	20	64	HEX55
MFAC08-12R	1	X	1 1/2	20	64	HEX60
MFAC08-16R	1	X	2	20	69	HEX75
MFAC10-12R	1 1/4	X	1 1/2	28	69	HEX60
MFAC10-16R	1 1/4	X	2	28	73	HEX75
MFAC12-16R	1 1/2	X	2	32	75	HEX75

**MFAD**

Male/Female Adaptor Type D



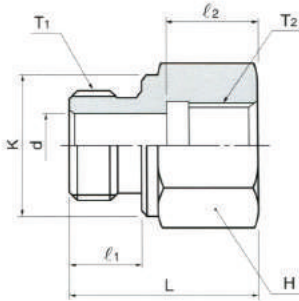
Designations	T <sub>1</sub> G(PF)	X	T <sub>2</sub> G(PF)	K	l <sub>1</sub>	l <sub>2</sub>	L	H
MFAD03-01G	3/8	X	1/8	22	12	8	22	HEX22
MFAD04-02G	1/2	X	1/4	26	14	12	24	HEX27
MFAD06-02G	3/4	X	1/4	32	16	12	26	HEX32
MFAD06-03G	3/4	X	3/8	32	16	12	26	HEX32
MFAD08-02G	1	X	1/4	39	18	12	29	HEX41
MFAD08-03G	1	X	3/8	39	18	12	29	HEX41
MFAD08-04G	1	X	1/2	39	18	14	29	HEX41
MFAD10-04G	1 1/4	X	1/2	49	20	14	32	HEX50
MFAD10-06G	1 1/4	X	3/4	49	20	16	32	HEX50
MFAD12-04G	1 1/2	X	1/2	55	22	14	36	HEX55
MFAD12-06G	1 1/2	X	3/4	55	22	16	36	HEX55
MFAD12-08G	1 1/2	X	1	55	22	18	36	HEX55

All dimensions are in millimeters. Dimensions are for reference only, subject to change.



## MFAE

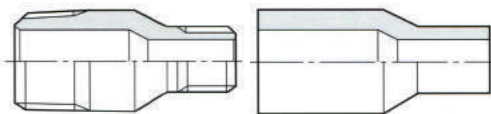
Male/Female Adaptor Type E



Designations	T <sub>1</sub> G(PF)	X	T <sub>2</sub> G(PF)	K	d	l <sub>1</sub>	l <sub>2</sub>	L	H
MFAE01-02G	1/8	X	1/4	14	4	8	17	31	HEX19
MFAE01-03G	1/8	X	3/8	14	4	8	17	32	HEX24
MFAE02-01G	1/4	X	1/8	18	5	12	12	28	HEX19
MFAE02-01G	1/4	X	3/8	18	6	12	17	36	HEX24
MFAE02-01G	1/4	X	1/2	18	6	12	20	40	HEX30
MFAE02-01G	1/4	X	3/4	18	6	12	22	43	HEX36
MFAE03-02G	3/8	X	1/4	22	8	12	17	36	HEX22
MFAE03-02G	3/8	X	1/2	22	8	12	20	41	HEX30
MFAE03-02G	3/8	X	3/4	22	8	12	22	44	HEX36
MFAE04-03G	1/2	X	3/8	26	12	14	17	36	HEX27
MFAE04-03G	1/2	X	3/4	26	12	14	22	46	HEX36
MFAE04-03G	1/2	X	1	26	12	14	24.5	49	HEX41
MFAE04-03G	1/2	X	1 1/4	26	10	14	26.5	53	HEX55
MFAE06-08G	3/4	X	1/2	32	16	16	20	41	HEX32
MFAE06-08G	3/4	X	1	32	16	16	24.5	51	HEX41
MFAE06-08G	3/4	X	1 1/4	32	16	16	26.5	56	HEX55
MFAE06-08G	3/4	X	1 1/2	32	16	16	28.5	57	HEX60
MFAE08-06G	1	X	3/4	39	18	18	22	47	HEX41
MFAE08-06G	1	X	1 1/4	39	18	18	26.5	57	HEX55
MFAE08-06G	1	X	1 1/2	39	18	18	28.5	59	HEX60
MFAE10-08G	1 1/4	X	1	49	20	20	24.5	52	HEX50
MFAE10-08G	1 1/4	X	1 1/2	49	20	20	28.5	60	HEX60
MFAE12-10G	1 1/2	X	1 1/4	55	22	22	26.5	58	HEX55

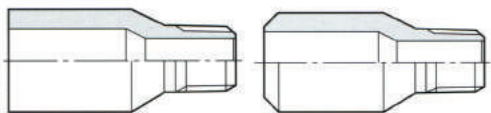
## MSS-SP-95

Swaged Nipple



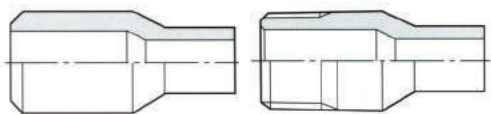
TBE

PBE



PLE / TSE

BLE / TSE



BLE / PSE

TLE / PSE

Large end Size	Small end Size	Length (mm)
1/2	3/8 - 1/8	70
3/4	1/2 - 1/8	76
1	3/4 - 1/8	89
1 1/4	1 - 1/8	102
1 1/2	1 1/4 - 1/8	114
2	1 1/2 - 1/8	165
2 1/2	2 - 1/8	178
3	2 1/2 - 1/8	203
3 1/2	3 - 1/8	203
4	3 1/2 - 1/8	229

TBE : Threaded both end

PBE : Plain both end

PLE / TSE : Plain large end - Threaded small end

BLE / TSE : Beveled large end - Threaded small end

BLE / PSE : Beveled large end - Plain small end

TLE / PSE : Threaded large end - Plain small end

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## CARBON STEEL PIPE

Nom. Size		O.D	Nominal Wall Thickness													
			Sch 40		Sch 60		Sch 80		Sch 100		Sch 120		Sch 140		Sch 160	
A	B		T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m
6	1/8	10.5	1.7	0.369	-	-	2.4	0.479	-	-	-	-	-	-	-	-
8	1/4	13.8	2.2	0.629	-	-	3.0	0.799	-	-	-	-	-	-	-	-
10	3/8	17.3	2.3	0.851	-	-	3.2	1.11	-	-	-	-	-	-	-	-
15	1/2	21.7	2.8	1.31	-	-	3.7	1.64	-	-	-	-	-	-	4.7	1.97
20	3/4	27.2	2.9	1.74	-	-	3.9	2.24	-	-	-	-	-	-	5.5	2.94
25	1	34.0	3.4	2.57	-	-	4.5	3.27	-	-	-	-	-	-	6.4	4.36
32	1 1/4	42.7	3.6	3.47	-	-	4.9	4.57	-	-	-	-	-	-	6.4	5.73
40	1 1/2	48.6	3.7	4.10	-	-	5.1	5.47	-	-	-	-	-	-	7.1	7.27
50	2	60.5	3.9	5.44	-	-	5.5	7.46	-	-	-	-	-	-	8.7	11.1
65	2 1/2	76.3	5.2	9.12	-	-	7.0	12.0	-	-	-	-	-	-	9.5	15.6
80	3	89.1	5.5	11.3	-	-	7.6	15.3	-	-	-	-	-	-	11.1	21.4
90	3 1/2	101.6	5.7	13.5	-	-	8.1	18.7	-	-	-	-	-	-	12.7	27.8
100	4	114.3	6.0	16.0	-	-	8.6	22.4	-	-	11.1	28.2	-	-	13.5	33.6
125	5	139.8	6.6	21.7	-	-	9.5	30.5	-	-	12.7	39.8	-	-	15.9	48.6
150	6	165.2	7.1	27.7	-	-	11.0	41.8	-	-	14.3	53.2	-	-	18.2	66.0
200	8	216.3	8.2	42.1	10.3	52.3	12.7	63.8	15.1	74.9	18.2	88.9	20.6	99.4	23.0	110
250	10	267.4	9.3	59.2	12.7	79.8	15.1	93.9	18.2	112	21.4	130	25.4	152	28.6	168
300	12	318.5	10.3	78.3	14.3	107	17.4	129	21.4	157	25.4	184	28.6	204	33.3	234

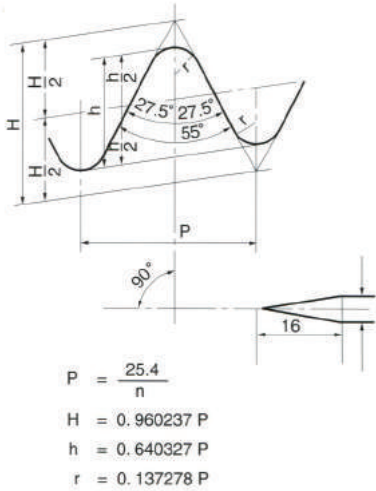
## STAINLESS STEEL PIPE

Nom. Size		O.D	Nominal Wall Thickness																				
			Sch 5S		Sch 10S		Sch 20S		Sch 40		Sch 80		Sch 120		Sch 160								
A	B		T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m	T	Weight kg/m							
			304 TP	316 TP	304 TP	316 TP	304 TP	316 TP	304 TP	316 TP	304 TP	316 TP	304 TP	316 TP	304 TP	316 TP							
6	1/8	10.5	1.0	0.237	0.238	1.2	0.278	0.280	1.5	0.336	0.338	1.7	0.373	0.375	2.4	0.484	0.487	-	-	-	-	-	-
8	1/4	13.8	1.2	0.377	0.379	1.65	0.499	0.503	2.0	0.588	0.592	2.2	0.636	0.640	3.0	0.807	0.812	-	-	-	-	-	-
10	3/8	17.3	1.2	0.481	0.484	1.65	0.643	0.647	2.0	0.762	0.767	2.3	0.859	0.865	3.2	1.12	1.13	-	-	-	-	-	-
15	1/2	21.7	1.65	0.824	0.829	2.1	1.03	1.03	2.5	1.20	1.20	2.8	1.32	1.33	3.7	1.66	1.67	-	-	-	4.7	1.99	2.00
20	3/4	27.2	1.65	1.05	1.06	2.1	1.31	1.32	2.5	1.54	1.55	2.9	1.76	1.77	3.9	2.26	2.28	-	-	-	5.5	2.97	2.99
25	1	34.0	1.65	1.33	1.34	2.8	2.18	2.19	3.0	2.32	2.33	3.4	2.59	2.61	4.5	3.31	3.33	-	-	-	6.4	4.40	4.43
32	1 1/4	42.7	1.65	1.69	1.70	2.8	2.78	2.80	3.0	2.97	2.99	3.6	3.51	3.53	4.9	4.61	4.64	-	-	-	6.4	5.79	5.82
40	1 1/2	48.6	1.65	1.93	1.94	2.8	3.19	3.21	3.0	3.41	3.43	3.7	4.14	4.16	5.1	5.53	5.56	-	-	-	7.1	7.34	7.39
50	2	60.5	1.65	2.42	2.43	2.8	4.02	4.06	3.5	4.97	5.00	3.9	5.50	5.53	5.5	7.54	7.58	-	-	-	8.7	11.2	11.3
65	2 1/2	76.3	2.1	3.88	3.91	3.0	5.48	5.51	3.5	6.35	6.39	5.2	9.21	9.27	7.0	12.1	12.2	-	-	-	9.5	15.8	15.9
80	3	89.1	2.1	4.55	4.58	3.0	6.43	6.48	4.0	8.48	8.53	5.5	11.5	11.5	7.6	15.4	15.5	-	-	-	11.1	21.6	21.7
90	3 1/2	101.6	2.1	5.20	5.24	3.0	7.37	7.42	4.0	9.72	9.79	5.7	13.6	13.7	8.1	18.9	19.0	-	-	-	12.7	28.1	28.3
100	4	114.3	2.1	5.37	5.91	3.0	8.32	8.37	4.0	11.0	11.1	6.0	16.2	16.3	8.6	22.6	22.8	11.1	28.5	28.7	13.5	33.9	34.1
125	5	139.8	2.8	9.56	9.62	3.4	11.6	11.6	5.0	16.3	16.9	6.6	21.9	22.0	9.5	30.8	31.0	12.7	40.2	40.5	15.9	49.1	49.4
150	6	165.2	2.8	11.3	11.4	3.4	13.7	13.8	5.0	20.0	20.1	7.1	28.0	28.1	11.0	42.3	42.5	14.3	53.8	54.1	18.2	66.6	66.9
200	8	216.3	2.8	14.9	15.0	4.0	21.2	21.3	6.5	34.0	34.2	8.2	42.5	42.8	12.7	64.4	64.8	18.2	89.8	90.4	23.0	110.7	111.4
250	10	267.4	3.4	22.4	22.5	4.0	26.2	26.4	6.5	42.2	42.5	9.3	59.8	60.2	15.1	94.9	95.5	21.4	131.1	131.9	28.6	170.1	171.2
300	12	318.5	4.0	31.3	31.5	4.5	35.2	35.4	6.5	50.5	50.8	10.3	79.1	79.6	17.4	130.5	131.3	25.4	185.4	186.6	33.3	236.5	238.0

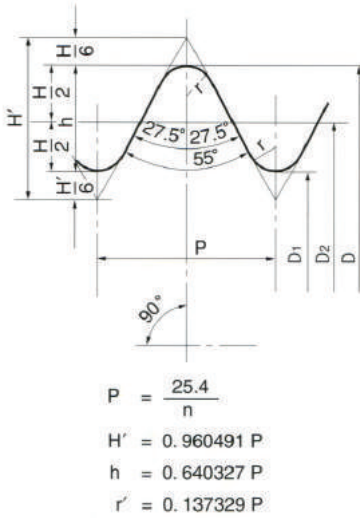
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

# TAPER PIPE THREADS JIS B0203 / B0202

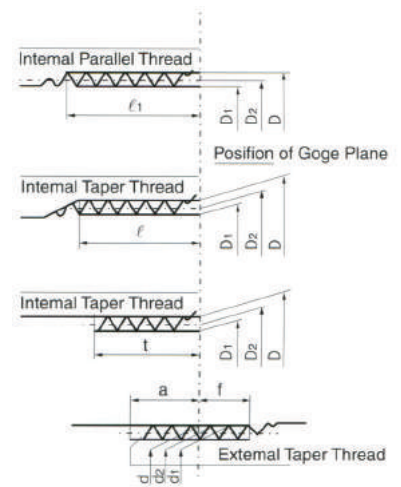
Basic Profile of External Taper Thread and Internal Taper Thread



Basic Profile of Internal Parallel Thread



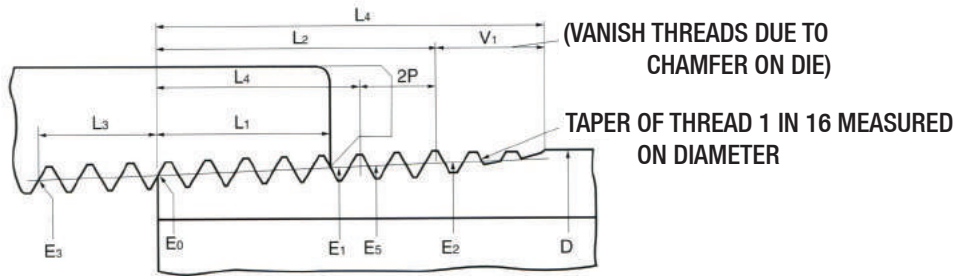
Fit of External Taper Thread to Internal Taper Thread or Internal Parallel Thread



Unit: mm

Nominal Size	Number of Thread per inch	Screw Thread			Basic Diameter			Position of Basic Diameter			Tolerances on Basic Diameters of Internal Parallel Thread	Fitting Allowance	Effective Thread Length (Min.)			Nominal Pipe Size (For Reference)	
		Pitch	Height of Thread	Round-ing	External Thread			External Thread		Internal Thread			When there is an incomplete thread or More	When there is no incomplete thread			
					Major Diameter d	Pitch Diameter d <sub>2</sub>	Minor Diameter d <sub>1</sub>	From the End of Pipe	The End of Pipe	Internal Thread							
		Internal Thread			Major Diameter	Pitch Diameter	Minor Diameter	Basic Length	Tolerance Axially	Tolerance Axially			Internal Taper Thread	Internal Parallel Thread	Internal Taper and Parallel Thread	Out side Diameter	Wall thick ness
		n	p	h													
R(PT) 1/8	28	0.9071	0.581	0.12	9.728	9.147	8.566	3.97	0.91	1.13	0.071	2.5	6.2	7.4	4.4	10.5	2.0
R(PT) 1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445	6.01	1.34	1.67	0.104	3.7	9.4	11.0	6.7	13.8	2.3
R(PT) 3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950	6.35	1.34	1.67	0.104	3.7	9.7	11.4	7.0	17.3	2.3
R(PT) 1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.0	12.7	15.0	9.1	21.7	2.8
R(PT) 3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.0	14.1	16.3	10.2	27.2	2.8
R(PT) 1	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.181	6.4	16.2	19.1	11.6	34.0	3.2
R(PT)1 1/4	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	42.7	3.5
R(PT)1 1/2	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	48.6	3.5
R(PT) 2	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.181	7.5	22.8	25.7	16.9	60.5	3.8
R(PT)2 1/2	11	2.3091	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.216	9.2	26.7	30.1	18.6	76.3	4.2
R(PT) 3	11	2.3091	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.216	9.2	29.8	33.3	21.1	89.1	4.2
R(PT)3 1/2	11	2.3091	1.479	0.32	100.330	98.851	97.372	22.23	3.46	3.46	0.216	9.2	31.4	34.9	22.4	101.6	4.2
R(PT) 4	11	2.3091	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.216	10.4	35.8	39.3	25.9	114.3	4.5
R(PT) 5	11	2.3091	1.479	0.32	138.430	136.951	135.472	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.3	139.8	4.5
R(PT) 6	11	2.3091	1.479	0.32	163.830	162.351	160.872	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.4	165.2	5.0

## AMERICAN NATIONAL STANDARD TAPER PIPE THREADS NPT (ANSI : B1 .20 .1)



Unit : inch

Nominal Pipe Size	Outside Dia of Pipe D	Threads per Inch n	Pitch of Thread P	Pitch Diameter at Beginning of External Thread E <sub>0</sub>	Handtight Engagement		Effective Thread External	
					Length L <sub>1</sub>	Dia E <sub>1</sub>	Length L <sub>2</sub>	Dia E <sub>2</sub>
1/16	0.3125	27	0.03704	0.27118	0.160	0.28118	0.2611	0.28750
1/8	0.405	27	0.03704	0.36351	0.1615	0.37360	0.2639	0.38000
1/4	0.540	18	0.05556	0.47739	0.2278	0.49163	0.4018	0.50250
3/8	0.675	18	0.05556	0.61201	0.240	0.62701	0.4078	0.63750
1/2	0.840	14	0.07143	0.75843	0.320	0.77843	0.5337	0.79179
3/4	1.050	14	0.07143	0.96768	0.339	0.98887	0.5457	1.00179
1	1.315	11 1/2	0.08696	1.21363	0.400	1.23863	0.6828	1.25630
1 1/4	1.660	11 1/2	0.08696	1.55713	0.420	1.58338	0.7068	1.60130
1 1/2	1.900	11 1/2	0.08696	1.79609	0.420	1.82234	0.7235	1.84130
2	2.375	11 1/2	0.08696	2.26902	0.436	2.29627	0.7565	2.31630
2 1/2	2.875	8	0.12500	2.71953	0.682	2.76216	1.1375	2.79062
3	3.500	8	0.12500	3.34062	0.766	3.38850	1.2000	3.41562
3 1/2	4.000	8	0.12500	3.83750	0.821	3.88881	1.2500	3.91562
4	4.500	8	0.12500	4.33438	0.844	4.38712	1.3000	4.41562
5	5.563	8	0.12500	5.39073	0.937	5.44929	1.4063	5.47862
6	6.625	8	0.12500	6.44609	0.958	6.50597	1.5125	6.54062

Nominal Pipe Size	Wrench Make-up Length for External Thread L <sub>2</sub> -L <sub>1</sub>	Wrench Make-up Length for Internal Thread		Vanish Thread (3.47 Thds) V	Overall Length External Thread L <sub>4</sub>	Nominal Perfect External Threads		Height of Thread h	Basic Minor Dia. at Small End of Pipe K <sub>0</sub>
		Length L <sub>3</sub>	Dia E <sub>3</sub>			Length L <sub>5</sub>	Dia E <sub>5</sub>		
1/16	0.1011	0.1111	0.26424	0.1285	0.3896	0.1870	0.28287	0.02963	0.2416
1/8	0.1024	0.1111	0.35656	0.1285	0.3924	0.1898	0.37537	0.02963	0.3339
1/4	0.1740	0.1667	0.46697	0.1928	0.5946	0.2907	0.49556	0.04444	0.4329
3/8	0.1678	0.1667	0.60160	0.1928	0.6006	0.2967	0.63056	0.04444	0.5676
1/2	0.2137	0.2143	0.74504	0.2478	0.7815	0.3909	0.78286	0.05714	0.7013
3/4	0.2067	0.2143	0.95429	0.2478	0.7935	0.4029	0.99286	0.05714	0.9105
1	0.2828	0.2609	1.19733	0.3017	0.9845	0.5089	1.24543	0.06957	1.1441
1 1/4	0.2868	0.2609	1.54083	0.3017	1.0085	0.5329	1.59043	0.06957	1.4876
1 1/2	0.3035	0.2609	1.77978	0.3017	1.0252	0.5496	1.83043	0.06957	1.7265
2	0.3205	0.2609	2.25272	0.3017	1.0582	0.5826	2.30543	0.06957	2.1995
2 1/2	0.4555	0.2500	2.70391	0.4337	1.5712	0.8875	2.77500	0.10000	2.6195
3	0.4340	0.2500	3.32500	0.4337	1.6337	0.9500	3.40000	0.10000	3.2406
3 1/2	0.4290	0.2500	3.82188	0.4337	1.6837	1.0000	3.90000	0.10000	3.7375
4	0.4560	0.2500	4.31875	0.4337	1.7337	1.0500	4.40000	0.10000	4.2344
5	0.4693	0.2500	5.37511	0.4337	1.8400	1.1563	5.46300	0.10000	5.2907
6	0.5545	0.2500	6.43047	0.4337	1.9462	1.2625	6.52500	0.10000	6.3461



# HOSE TYPE





## 1. Applicable hoses

Our hose fittings were divided to two classes by their use;

- Low pressure hose fittings : For use general low pressure hoses made by rubber, vinylon, ect.
- High pressure hose fittings : For use high pressure flexible hoses inside wire included.

## 2. Nominal pressure

- Low pressure hose fittings : 10kgf/cm<sup>2</sup> (desingantion mark K01)
- High pressure hose fittings : 210kgf/cm<sup>2</sup> (desingantion mark K21)

## 3. Materials for fittings

- JIS G4303 SUS304, SUS316
- JIS G4301 SS400
- JIS G4051 S20C
- JIS G3201 SF440A
- JIS H3250 C3604, C3771

## 4. Threads

- Parallel pipe threads, JIS B0202 mark G, PF
- Taper pipe thread, JIS B0203, mark R, PT
- Metric fine screw threads, JIS B0207 mark M

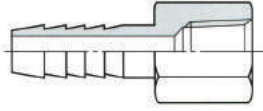
## 5. Desingnation of hose size

Hose size	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Inner Dia.(mm)	6.4	9.5	12.7	15.9	19.0	25.4	31.8	38.1	50.8
Mark	H02	H03	H04	H05	H06	H08	H10	H12	H16

## 6. Flare angle

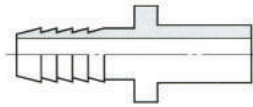
30° is our standard flare angle for hose fittings, if the other flare angle is required, then please note the angle clearly on purchase order.

**HNF**  
Female Nipple-10K



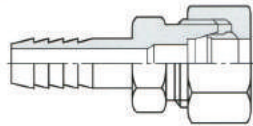
50

**HNT**  
Tubed Nipple-10K



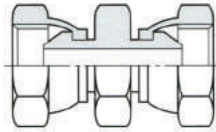
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**HNB**  
Bite Nipple-10K



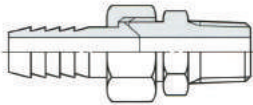
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**HSU**  
Swaged Union-210K



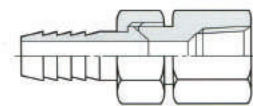
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**HUM**  
Male Union-10K



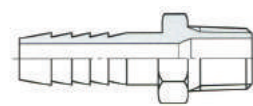
51

**HUF**  
Female Union-10K



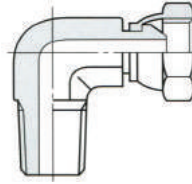
51

**HNM**  
Male Nipple-10K



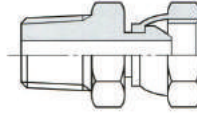
51

**HSLM**  
Swaged Male  
Elbow-210K



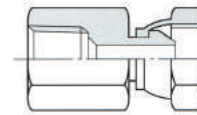
52

**HSCM**  
Swaged Male  
Connector-210K



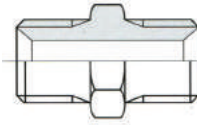
52

**HSCF**  
Swaged Female  
Connector-210K



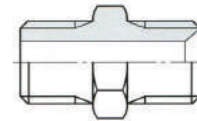
52

**HHNA**  
Hex Nipple(A)-210K



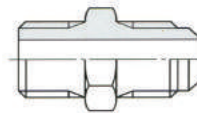
52

**HHNB**  
Hex Nipple(B)-210K



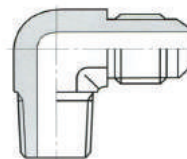
53

**HHNC**  
Hex Nipple(C)-210K



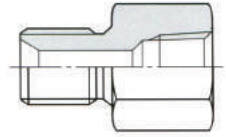
53

**HLM**  
Male Elbow-210K



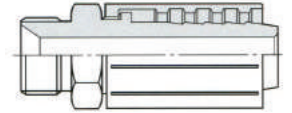
53

**HAF**  
Female Adaptor-210K



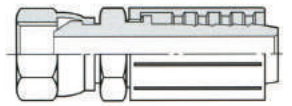
53

**HN**  
Nipple-210K



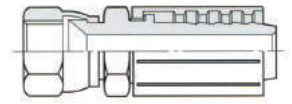
54

**HSNM**  
Swaged Nipple(M)-210K



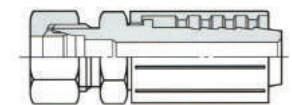
54

**HSNF**  
Swaged Nipple(F)-210K



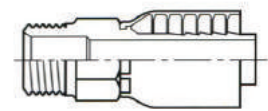
54

**HNB**  
Bite Nipple-210K



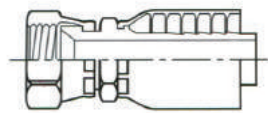
54

**HN143**  
Swaged Nipple

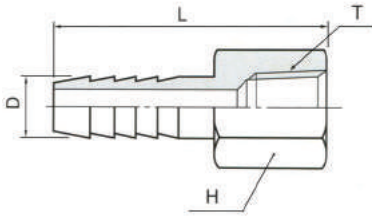


55

**HSNF643**  
Nipple



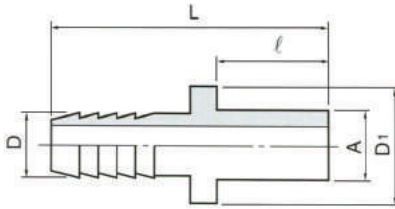
55

**HNF****Female Nipple-10K**

Unit:mm

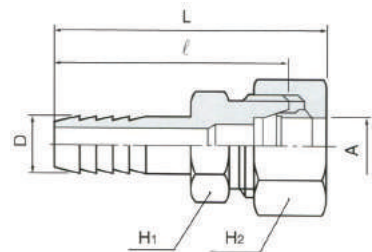
Designations	D(Hose I.D)		T (PT)	H	L
	inch	mm			
HNF-K01-H02R02	1/4	6.4	1/4	19	33
HNF-K01-H03R02	3/8	9.5	1/4	19	39
HNF-K01-H03R03	3/8	9.5	3/8	22	41
HNF-K01-H04R03	1/2	12.7	3/8	22	47
HNF-K01-H04R04	1/2	12.7	1/2	27	51
HNF-K01-H05R04	5/8	15.8	1/2	27	51
HNF-K01-H05R06	5/8	15.8	3/4	36	53
HNF-K01-H06R04	3/4	19.0	1/2	27	55
HNF-K01-H06R06	3/4	19.0	3/4	36	57
HNF-K01-H08R06	1	25.4	3/4	36	67
HNF-K01-H08R08	1	25.4	1	41	70
HNF-K01-H10R10	1 1/4	31.8	1 1/4	50	80
HNF-K01-H12R12	1 1/2	38.1	1 1/2	60	89
HNF-K01-H16R16	2	50.8	2	70	97

Unit:mm

**HNT****Tubed Nipple-10K**

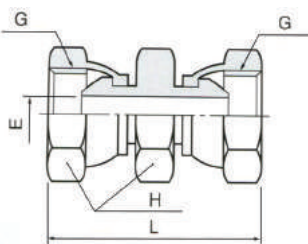
Designations	D(Hose I.D)		A	D <sub>1</sub>	l	L
	inch	mm				
HNT-K01-H02	1/4	6.4	6	10	20	37
HNT-K01-H03	3/8	9.5	10	15	21	44
HNT-K01-H04	1/2	12.7	12	17	22	51
HNT-K01-H05	5/8	15.8	15	20	24	53
HNT-K01-H06	3/4	19.0	18	25	25	58
HNT-K01-H08	1	25.4	25	32	28	72
HNT-K01-H10	1 1/4	31.8	32	40	30	80
HNT-K01-H12	1 1/2	38.1	38	45	36	94
HNT-K01-H16	2	50.8	50	60	37	97

Unit:mm

**HNB****Bite Nipple-10K**

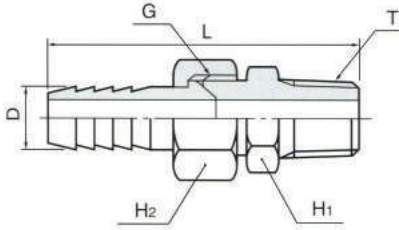
Designations	D(Hose I.D)		Tube O.D A	H <sub>1</sub>	H <sub>2</sub>	l	About L
	inch	mm					
HNB-K01-H0208	1/4	6.4	8	17	17	33	44
HNB-K01-H0310	3/8	9.5	10	17	19	39	50
HNB-K01-H0312	3/8	9.5	12	19	22	39	50
HNB-K01-H0415	1/2	12.7	15	22	27	48	60
HNB-K01-H0416	1/2	12.7	16	27	30	48	60
HNB-K01-H1518	5/8	15.8	18	27	32	48	60
HNB-K01-H0520	5/8	15.8	20	30	36	49	61
HNB-K01-H0622	3/4	19.0	22	32	36	54	67
HNB-K01-H0625	3/4	19.0	25	36	41	55	68
HNB-K01-H0828	1	25.4	28	41	46	67	81
HNB-K01-H0830	1	25.4	30	41	46	67	81
HNB-K01-H1032	1 1/4	31.8	32	46	50	75	89
HNB-K01-H1035	1 1/4	31.8	35	46	55	75	83
HNB-K01-H1238	1 1/2	38.1	38	50	60	85	104
HNB-K01-H1240	1 1/2	38.1	40	55	60	86	105
HNB-K01-H1242	1 1/2	38.1	42	55	60	89	110
HNB-K01-H1650	2	50.8	50	65	74	92	114

Unit:mm

**HSU****Swaged Union-210K**

Designations	G (PF)	E	H	L
HSU-K21-G03	3/8	7	22	56
HSU-K21-G04	1/2	10	27	60
HSU-K21-G06	3/4	14	36	70
HSU-K21-G08	1	20	41	76
HSU-K21-G10	1 1/4	25	50	82
HSU-K21-G12	1 1/2	30	60	83
HSU-K21-G16	2	40	70	102

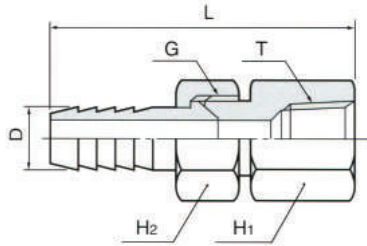
**HUM**  
Male Union-10K



Unit: mm

Designations	D(Hose I.D)		T (PT)	G (PF)	H <sub>1</sub>	H <sub>2</sub>	L
	inch	mm					
HUM-K01-H02R02	1/4	6.4	1/4	1/8	14	11	46
HUM-K01-H03R02	3/8	9.5	1/4	3/8	14	19	48
HUM-K01-H03R03	3/8	9.5	3/8	3/8	19	19	51
HUM-K01-H04R03	1/2	12.7	3/8	1/2	19	25	55
HUM-K01-H04R04	1/2	12.7	1/2	1/2	22	25	58
HUM-K01-H05R04	5/8	15.8	1/2	1/2	22	25	58
HUM-K01-H05R06	5/8	15.8	3/4	1/2	27	25	60
HUM-K01-H06R04	3/4	19.0	1/2	3/4	22	30	58
HUM-K01-H06R06	3/4	19.0	3/4	3/4	27	30	60
HUM-K01-H08R06	1	25.4	3/4	1	27	41	62
HUM-K01-H08R08	1 1/4	25.4	1	1	36	41	66
HUM-K01-H10R10	1 1/4	31.8	1 1/4	1 1/4	46	50	75
HUM-K01-H12R12	1 1/2	38.1	1 1/2	1 1/2	50	60	82
HUM-K01-H16R16	2	50.8	2	2	65	70	91

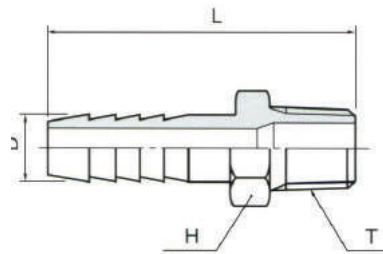
**HUF**  
Female Union-10K



Unit: mm

Designations	D(Hose I.D)		T (PT)	G (PF)	H <sub>1</sub>	H <sub>2</sub>	L
	inch	mm					
HUF-K01-H02R02	1/4	6.4	1/4	1/8	19	14	51
HUF-K01-H03R02	3/8	9.5	1/4	3/8	19	19	53
HUF-K01-H03R03	3/8	9.5	3/8	3/8	22	19	57
HUF-K01-H04R03	1/2	12.7	3/8	1/2	22	24	60
HUF-K01-H04R04	1/2	12.7	1/2	1/2	27	24	65
HUF-K01-H05R04	5/8	15.8	1/2	1/2	27	24	65
HUF-K01-H05R06	5/8	15.8	3/4	1/2	36	24	67
HUF-K01-H06R04	3/4	19.0	1/2	3/4	27	30	65
HUF-K01-H06R06	3/4	19.0	3/4	3/4	36	30	67
HUF-K01-H08R06	1	25.4	3/4	1	36	41	69
HUF-K01-H08R08	1	25.4	1	1	41	41	74
HUF-K01-H10R10	1 1/4	31.8	1 1/4	1	50	50	85
HUF-K01-H12R12	1 1/2	38.1	1 1/2	1 1/2	60	60	92
HUF-K01-H16R16	2	50.8	2	2	70	70	103

**HNM**  
Male Nipple-10K

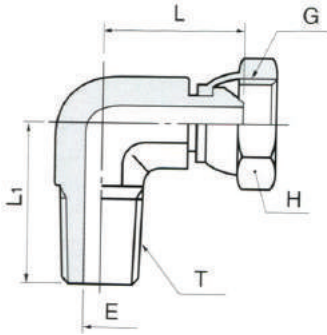


Unit: mm

Designations	D(Hose I.D)		T (PT)	H	L
	inch	mm			
HNM-K01-H02R02	1/4	6.4	1/4	14	34
HNM-K01-H02R03	1/4	6.4	3/8	19	37
HNM-K01-H03R02	3/8	9.5	1/4	14	40
HNM-K01-H03R03	3/8	9.5	3/8	19	43
HNM-K01-H04R02	1/2	12.7	1/4	14	46
HNM-K01-H04R03	1/2	12.7	3/8	19	49
HNM-K01-H04R04	1/2	12.7	1/2	22	52
HNM-K01-H05R03	5/8	15.8	3/8	19	49
HNM-K01-H05R04	5/8	15.8	1/2	22	52
HNM-K01-H05R06	5/8	15.8	3/4	27	54
HNM-K01-H06R04	3/4	19.0	1/2	22	56
HNM-K01-H06R06	3/4	19.0	3/4	27	58
HNM-K01-H06R08	3/4	19.0	1	36	62
HNM-K01-H08R06	1	25.4	3/4	27	68
HNM-K01-H08R08	1	25.4	1	36	72
HNM-K01-H10R08	1 1/4	31.8	1	36	78
HNM-K01-H10R10	1 1/4	31.8	1 1/4	46	82
HNM-K01-H12R10	1 1/2	38.1	1 1/4	46	89
HNM-K01-H12R12	1 1/2	38.1	1 1/2	50	92
HNM-K01-H16R12	2	50.8	1 1/2	55	95
HNM-K01-H16R16	2	50.8	2	65	100

**HSLM**

Swaged Male Elbow-20K

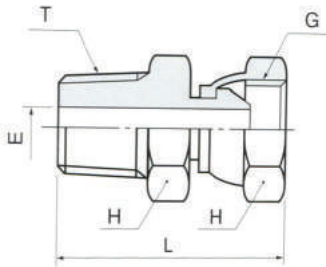


Unit:mm

Designations	G (PF)	T (PT)	E	H	L	L <sub>1</sub>
HSLM-K21-GR02	1/4	1/4	4	19	20	25
HSLM-K21-GR03	3/8	3/8	7	22	23	31
HSLM-K21-GR04	1/2	1/2	10	27	25	37
HSLM-K21-GR06	3/4	3/4	14	36	31	45
HSLM-K21-GR08	1	1	25	41	34	54
HSLM-K21-GR10	1 1/4	1 1/4	25	50	40	58
HSLM-K21-GR12	1 1/2	1 1/2	30	60	45	64
HSLM-K21-GR16	2	2	40	70	54	75

**HSCM**

Swaged Male Connector-210K

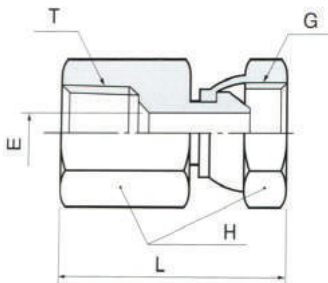


Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HSCM-K21-GR02	1/4	1/4	4	19	41
HSCM-K21-GR03	3/8	3/8	7	22	48
HSCM-K21-GR04	1/2	1/2	10	27	53
HSCM-K21-GR06	3/4	3/4	14	36	61
HSCM-K21-GR08	1	1	20	41	66
HSCM-K21-GR10	1 1/4	1 1/4	25	50	72
HSCM-K21-GR12	1 1/2	1 1/2	30	60	75
HSCM-K21-GR16	2	2	40	70	89

**HSCF**

Swaged Female Connector-210K

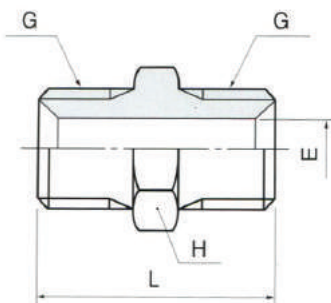


Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HSCF-K21-GR02	1/4	1/4	4	19	41
HSCF-K21-GR03	3/8	3/8	7	22	47
HSCF-K21-GR04	1/2	1/2	10	27	50
HSCF-K21-GR06	3/4	3/4	14	36	58
HSCF-K21-GR08	1	1	25	41	66
HSCF-K21-GR10	1 1/4	1 1/4	25	50	70
HSCF-K21-GR12	1 1/2	1 1/2	30	60	72
HSCF-K21-GR16	2	2	40	70	88

**HHNA**

Hex Nipple(A)-210K

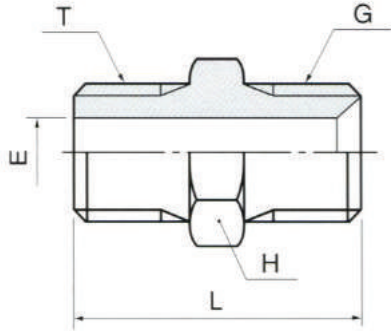


Unit:mm

Designations	G (PF)	E	H	L
HHNA-K21-G02	1/4	4	19	35
HHNA-K21-G03	3/8	7	22	42
HHNA-K21-G04	1/2	10	27	48
HHNA-K21-G06	3/4	14	36	56
HHNA-K21-G08	1	20	41	62
HHNA-K21-G10	1 1/4	25	50	66
HHNA-K21-G12	1 1/2	30	50	66
HHNA-K21-G16	2	40	65	83



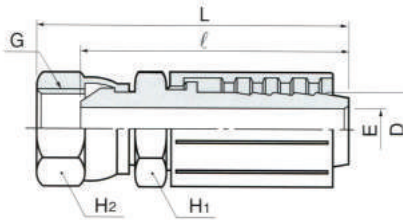
**HHNB**  
Hex Nipple(B)-210K



Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HHNB-K21-GR02	1/4	1/4	4	19	35
HHNB-K21-GR03	3/8	3/8	7	22	41
HHNB-K21-GR04	1/2	1/2	10	27	47
HHNB-K21-GR06	3/4	3/4	14	36	54
HHNB-K21-GR08	1	1	25	41	59
HHNB-K21-GR10	1 1/4	1 1/4	25	50	63
HHNB-K21-GR12	1 1/2	1 1/2	30	50	65
HHNB-K21-GR16	2	2	40	65	80

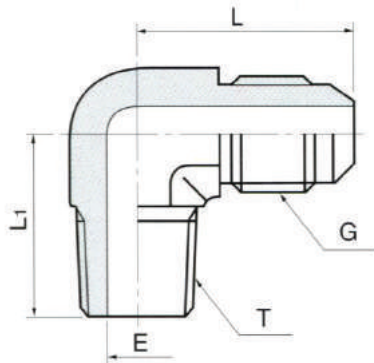
**HHNC**  
Hex Nipple(C)-210K



Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HHNC-K21-GR02	1/4	1/4	4	19	40
HHNC-K21-GR03	3/8	3/8	7	22	46
HHNC-K21-GR04	1/2	1/2	10	27	52
HHNC-K21-GR06	3/4	3/4	14	36	60
HHNC-K21-GR08	1	1	25	41	65
HHNC-K21-GR10	1 1/4	1 1/4	25	50	73
HHNC-K21-GR12	1 1/2	1 1/2	30	50	76
HHNC-K21-GR16	2	2	40	65	90

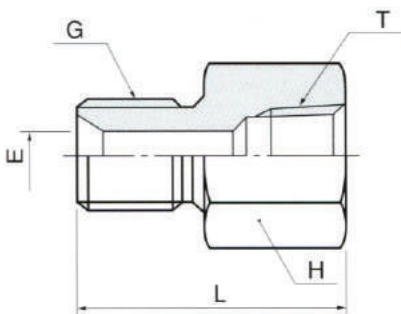
**HLM**  
Male Elbow-210K



Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HLM-K21-GR02	1/4	1/4	4	28	25
HLM-K21-GR03	3/8	3/8	7	34	31
HLM-K21-GR04	1/2	1/2	10	35	37
HLM-K21-GR06	3/4	3/4	14	45	45
HLM-K21-GR08	1	1	20	54	54
HLM-K21-GR10	1 1/4	1 1/4	25	60	58
HLM-K21-GR12	1 1/2	1 1/2	30	65	64
HLM-K21-GR16	2	2	40	77	75

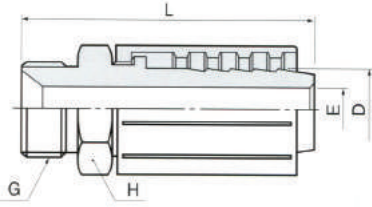
**HAF**  
Female Adaptor-210K



Unit:mm

Designations	G (PF)	T (PT)	E	H	L
HAF-K21-GR02	1/4	1/4	4	19	35
HAF-K21-GR03	3/8	3/8	7	22	40
HAF-K21-GR04	1/2	1/2	10	27	44
HAF-K21-GR06	3/4	3/4	14	36	51
HAF-K21-GR08	1	1	20	41	59
HAF-K21-GR10	1 1/4	1 1/4	25	50	63
HAF-K21-GR12	1 1/2	1 1/2	30	60	65
HAF-K21-GR16	2	2	40	70	78

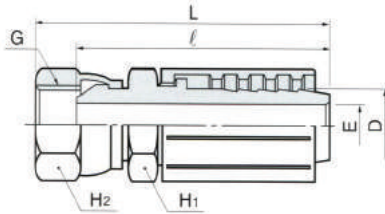
**HN**  
Nipple-210K



Unit:mm

Designations	D(Hose I.D)		G (PF)	E	H	L
	inch	mm				
HN-K01-HG02	1/4	6.4	1/4	3.5	19	60
HN-K01-HG03	3/8	9.5	3/8	6.3	22	66
HN-K01-HG04	1/2	12.7	1/2	9.3	27	72
HN-K01-HG06	3/4	19.0	3/4	14	36	89
HN-K01-HG08	1	25.4	1	20	41	92
HN-K01-HG10	1 1/4	31.8	1 1/4	24	50	112
HN-K01-HG12	1 1/2	38.1	1 1/2	30	60	112
HN-K01-HG16	2	50.8	2	40	70	140

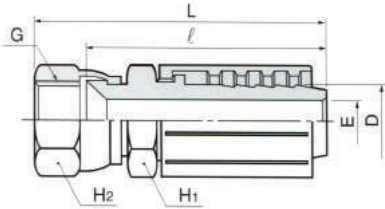
**HSNM**  
Swaged Nipple(M)-210K



Unit:mm

Designations	D(Hose I.D)		G (PF)	E	H <sub>1</sub>	H <sub>2</sub>	/	L
	inch	mm						
HSNM-K21-H02	1/4	6.4	1/4	3.5	19	19	61	64
HSNM-K21-H03	3/8	9.5	3/8	6.3	22	22	66	71
HSNM-K21-H04	1/2	12.7	1/2	9.3	27	27	70	76
HSNM-K21-H06	3/4	19.0	3/4	14	36	36	88	94
HSNM-K21-H08	1	25.4	1	20	41	41	89	97
HSNM-K21-H10	1 1/4	31.8	1 1/4	24	50	50	110	117
HSNM-K21-H12	1 1/2	38.1	1 1/2	30	60	60	113	118
HSNM-K21-H16	2	50.8	2	40	70	70	137	147

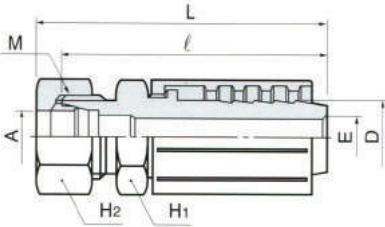
**HSNF**  
Swaged Nipple(F)-210K



Unit:mm

Designations	D(Hose I.D)		G (PF)	E	H <sub>1</sub>	H <sub>2</sub>	/	L
	inch	mm						
HSNF-K21-H02	1/4	6.4	1/4	3.5	19	19	56	64
HSNF-K21-H03	3/8	9.5	3/8	6.3	22	22	61	71
HSNF-K21-H04	1/2	12.7	1/2	9.3	27	27	65	76
HSNF-K21-H06	3/4	19.0	3/4	14	36	36	82	94
HSNF-K21-H08	1	25.4	1	20	41	41	83	97
HSNF-K21-H10	1 1/4	31.8	1 1/4	24	50	50	102	117
HSNF-K21-H12	1 1/2	38.1	1 1/2	30	60	60	104	118
HSNF-K21-H16	2	50.8	2	40	70	70	127	147

**HNB**  
Bite Nipple-210K

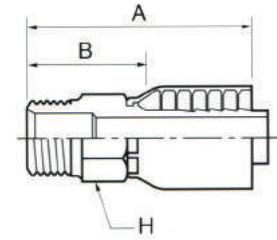


Unit:mm

Designations	D(Hose I.D)		A	E	M	H <sub>1</sub>	H <sub>2</sub>	/	About L
	inch	mm							
HNB-K21-H0206	1/4	6.4	6	3.5	M 12 × 1.25	19	14	56	66
HNB-K21-H2028	1/4	6.4	8	3.5	M 14 × 1.5	19	17	56	67
HNB-K21-H0310	3/8	9.5	10	6.3	M 16 × 1.5	22	19	58	69
HNB-K21-H0412	1/2	12.7	12	9.3	M 18 × 1.5	27	22	62	73
HNB-K21-H0415	1/2	12.7	15	9.3	M 22 × 1.5	30	27	65	77
HNB-K21-H0416	1/2	12.7	16	9.3	M 24 × 1.5	30	30	65	77
HNB-K21-H0618	3/4	19.0	18	14	M 26 × 1.5	36	32	77	89
HNB-K21-H0620	3/4	19.0	20	14	M 28 × 1.5	36	36	77	89
HNB-K21-H0622	3/4	19.0	22	14	M 30 × 1.5	36	36	78	91
HNB-K21-H0825	1	25.4	25	20	M 35 × 1.5	41	41	78	91
HNB-K21-H0828	1	25.4	28	20	M 38 × 1.5	41	46	79	93
HNB-K21-H1030	1 1/4	31.8	30	24	M 40 × 1.5	50	46	96	110
HNB-K21-H1032	1 1/4	31.8	32	24	M 42 × 1.5	50	50	97	111
HNB-K21-H1035	1 1/4	31.8	35	24	M 45 × 1.5	50	55	97	115
HNB-K21-H1238	1 1/2	38.1	38	30	M 48 × 1.5	60	60	100	119
HNB-K21-H1240	1 1/2	38.1	40	30	M 52 × 2	60	60	100	119
HNB-K21-H1242	1 1/2	38.1	42	30	M 52 × 2	60	60	101	122
HNB-K21-H1650	2	50.8	50	40	M 62 × 2	70	74	124	146

## 143 Male NPTF Pipe-Rigid Straight

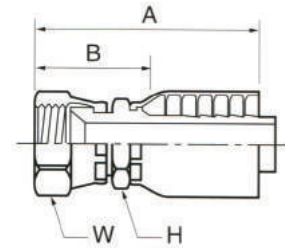
Note : "C"-Stainless Fitting. Must be crimped with Karrykrimp 2, PHastkrimp, Superkrimp, or Parkrimp 2.  
Note : Fittings with an "SM" suffix have metric hex.



# Part Number	Thread		Hose		A		H	B	
	inch		inch		inch	mm	inch	inch	mm
143-2-4	1/8 × 27	-2	1/4	-4	1.80	46	9/16	1.05	27
143-2-4C+	1/8 × 27	-2	1/4	-4	1.80	46	9/16	1.05	27
143-4-4	1/4 × 18	-4	1/4	-4	2.02	51	9/16	1.27	32
143-4-4C	1/4 × 18	-4	1/4	-4	2.02	51	9/16	1.27	32
143-4-4-SM+	1/4 × 18	-4	1/4	-4	1.87	47	17mm	1.27	28
143-4-5	1/4 × 18	-4	5/16	-5	1.95	50	11/16	1.20	30
143-4-5C+	1/4 × 18	-4	5/16	-5	1.95	50	11/16	1.20	30
143-4-6	1/4 × 18	-4	3/8	-6	2.26	57	3/4	1.25	32
143-4-6C+	1/4 × 18	-4	3/8	-6	2.26	57	3/4	1.25	32
143-6-4C	3/8 × 18	-6	1/4	-4	1.87	47	11/16	1.12	28
143-6-4C+	3/8 × 18	-6	1/4	-4	1.87	47	11/16	1.12	28
143-6-5	3/8 × 18	-6	5/16	-5	1.95	50	11/16	1.20	30
143-6-6	3/8 × 18	-6	3/8	-6	2.26	57	3/4	1.25	32
143-6-6C	3/8 × 18	-6	3/8	-6	2.26	57	3/4	1.25	32
143-6-8	3/8 × 18	-6	1/2	-8	2.37	60	7/8	1.37	35
143-6-10	3/8 × 18	-6	5/8	-10	2.59	66	15/16	1.18	30
143-6-12+	3/8 × 18	-6	3/4	-12	2.83	72	1-1/16	1.41	36
143-8-4	1/2 × 14	-8	1/4	-4	2.14	54	7/8	1.39	35
143-8-6	1/2 × 14	-8	3/8	-4	2.37	60	7/8	1.37	35
143-8-6C+	1/2 × 14	-8	3/8	-4	2.37	60	7/8	1.37	35
143-8-8	1/2 × 14	-8	1/2	-8	2.63	67	7/8	1.38	35
143-8-8C	1/2 × 14	-8	1/2	-8	2.63	67	7/8	1.38	35
143-8-10	1/2 × 14	-8	5/8	-10	2.59	66	15/16	1.18	30
143-8-12	1/2 × 14	-8	3/4	-12	2.85	72	1-1/16	1.44	37
143-12-8	3/4 × 14	-12	1/2	-8	2.68	68	1-1/16	1.43	36
143-12-8C+	3/4 × 14	-12	1/2	-8	2.68	68	1-1/16	1.43	36
143-12-10	3/4 × 14	-12	5/8	-10	3.01	76	15/16	1.60	41
143-12-12	3/4 × 14	-12	3/4	-12	3.08	78	1-1/16	1.65	42
143-12-12C	3/4 × 14	-12	3/4	-12	3.08	78	1-1/16	1.65	42
143-12-16	3/4 × 14	-12	1	-16	3.38	86	1-3/8	1.79	45
143-16-8+	1 × 11-1/2	-16	1/2	-8	3.07	78	1-3/8	1.82	46
143-16-12	1 × 11-1/2	-16	3/4	-12	3.08	78	1-3/8	1.65	42
143-16-16	1 × 11-1/2	-16	1	-16	3.62	92	-3/8	2.03	52
143-16-16C	1 × 11-1/2	-16	1	-16	3.62	92	-3/8	2.03	52
143-16-20C	1 × 11-1/2	-16	1	-20	3.68	93	1-3/4	2.03	52
143-16-20C+	1 × 11-1/2	-16	1	-20	3.68	93	1-3/4	2.03	52
143-20-20	1-1/4 × 11-1/2	-20	1-1/4	-20	4.04	103	1-3/4	2.39	61
143-20-20C	1-1/4 × 11-1/2	-20	1-1/4	-20	4.04	103	1-3/4	2.29	61
143-24-20+	1-1/2 × 11-1/2	-24	1-14	-20	4.03	102	2	2.38	60
143-24-24	1-1/2 × 11-1/2	-24	1-12	-24	3.78	96	2	2.38	60
143-24-24C+	1-1/2 × 11-1/2	-24	1-12	-24	3.78	96	2	2.38	60
143-32-32	2 × 11 -1/2	-32	2	-32	4.33	110	3-12	2.42	61
143-32-32C+	2 × 11 -1/2	-32	2	-32	4.33	110	3-12	2.42	61

## 643 Female JIC 37° - Swivel Straight

- ~ These 10643 fittings contain a dual seat that accepts both the JIC (37 deg.) and SAE (45 deg.) male configurations. the -6 and 12 SAE 45 deg. swivel fittings are shown under 10843
- Note : "C" - Stainless Steel Fitting. Must be crimped with Karrykrimp 2, PHastkrimp, Superkrimp, or Parkrimp 2.



Part Number	Thread			Hose		A		H	W	B	
	inch	inch	inch	inch	inch	inch	mm	inch	inch	inch	mm
643-4-4~	1/4	7/16 × 20	-4	1/4	-4	1.94	49	9/16	9/16	1.19	30
643-4-4C~	1/4	7/16 × 20	-4	1/4	-4	1.94	49	9/16	9/16	1.19	30
643-4-5+~	1/4	7/16 × 20	-4	5/16	-5	2.02	50	11/16	9/16	1.27	30
643-4-6	1/4	7/16 × 20	-4	3/8	-6	2.02	56	11/16	9/16	1.17	30
643-4-6C+	1/4	7/16 × 20	-4	3/8	-6	2.02	56	11/16	9/16	1.17	30
643-5-4~	5/16	1/2 × 20	-5	1/4	-4	2.03	52	9/16	5/8	1.28	33
643-5-5~	5/16	1/2 × 20	-5	5/16	-5	2.08	53	11/16	5/8	1.33	34
643-5-6~	5/16	1/2 × 20	-5	3/8	-6	2.26	57	11/16	5/8	1.23	31
643-5-6C~+	5/16	1/2 × 20	-5	3/8	-6	2.26	57	11/16	5/8	1.23	31
643-6-4	3/8	9/16 × 18	-6	1/4	-4	2.05	52	9/16	11/16	1.30	33
643-6-4C+	3/8	9/16 × 18	-6	1/4	-4	2.05	52	9/16	11/16	1.30	33
643-6-5	3/8	9/16 × 18	-6	5/16	-5	2.05	53	11/16	11/16	1.35	34
643-6-6	3/8	9/16 × 18	-6	3/8	-6	2.29	58	11/16	11/16	1.26	32
643-6-6C	3/8	9/16 × 18	-6	3/8	-6	2.29	58	11/16	11/16	1.26	32
643-6-8	3/8	9/16 × 18	-6	1/2	-8	2.51	64	13/16	11/16	1.25	32
643-8-4~+	1/2	3/4 × 16	-8	1/4	-4	2.22	56	11/16	7/8	1.47	37
643-8-6~	1/2	3/4 × 16	-8	3/8	-6	2.49	63	11/16	7/8	1.46	37
643-8-8~	1/2	3/4 × 16	-8	1/2	-8	2.63	67	13/16	7/8	1.37	35
643-8-8C~	1/2	3/4 × 16	-8	1/2	-8	2.63	67	13/16	7/8	1.37	35
643-8-10~	1/2	3/4 × 16	-8	5/8	-10	2.82	72	15/16	7/8	1.38	35
643-8-12~	1/2	3/4 × 16	-8	3/4	-12	2.83	72	1-1/16	7/8	1.39	35
643-8-12C~+	1/2	3/4 × 16	-8	3/4	-12	2.83	72	1-1/16	7/8	1.39	35
643-8-16~+	1/2	3/4 × 16	-8	1	-16	3.27	82	1-1/14	7/8	1.65	41
643-10-6~	5/8	7/8 × 14	-10	3/8	-6	2.51	64	7/8	1	1.48	38
643-10-6C~+	5/8	7/8 × 14	-10	3/8	-6	2.51	64	7/8	1	1.48	38
643-10-8C~	5/8	7/8 × 14	-10	1/2	-8	2.85	72	7/8	1	1.59	40
643-10-8C~+	5/8	7/8 × 14	-10	1/2	-8	2.85	72	7/8	1	1.59	40
643-10-10~	5/8	7/8 × 14	-10	5/8	-10	2.93	74	15/16	1	1.49	38
643-10-10C~	5/8	7/8 × 14	-10	5/8	-10	2.93	74	15/16	1	1.49	38
643-10-12~	5/8	7/8 × 14	-10	3/4	-12	2.93	74	1-1/16	1	1.49	38
643-12-8	3/4	1-1/16 × 12	-12	1/2	-8	2.78	71	1-1/16	1-1/4	1.52	39
643-12-10	3/4	1-1/16 × 12	-12	5/8	-10	3.10	79	1-1/16	1-1/4	1.66	42
643-12-12	3/4	1-1/16 × 12	-12	3/4	-12	3.17	81	1-1/16	1-1/4	1.73	44
643-12-12C	3/4	1-1/16 × 12	-12	3/4	-12	3.17	81	1-1/16	1-1/4	1.73	44
643-12-16	3/4	1-1/16 × 12	-12	1	-16	3.29	84	1-3/8	1-1/4	1.67	42
643-12-16C+	3/4	1-1/16 × 12	-12	1	-16	3.29	84	1-3/8	1-1/4	1.67	42
643-14-12	7/8	1-3/16 × 12	-14	3/4	-12	3.18	81	1-1/4	1-3/8	1.74	44
643-16-12	1	1-5/16 × 12	-16	3/4	-12	3.31	84	1-1/4	1-1/2	1.87	47
643-16-12C+	1	1-5/16 × 12	-16	3/4	-12	3.31	84	1-1/4	1-1/2	1.87	47
643-16-16	1	1-5/16 × 12	-16	1	-16	3.62	92	1-3/8	1-1/2	2.00	51
643-16-16C	1	1-5/16 × 12	-16	1	-16	3.62	92	1-3/8	1-1/2	2.00	51
643-16-20+	1	1-5/16 × 12	-16	1-1/4	-20	3.81	97	1-7/8	1-1/2	2.12	54

Note : More sizes of this fitting are located the following page.



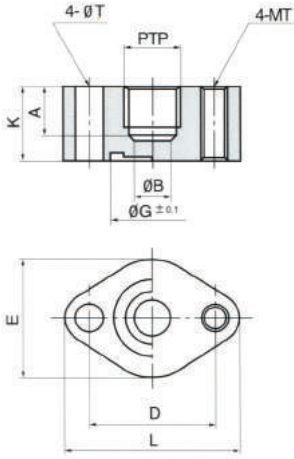
# SQUARE FLANGE TYPE



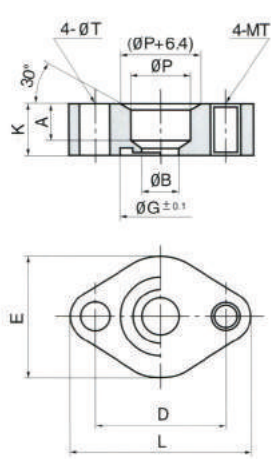


## TWO BOLT FLANGE

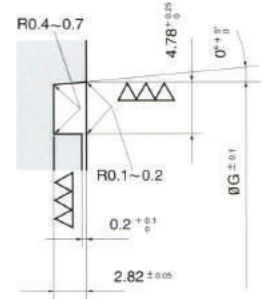
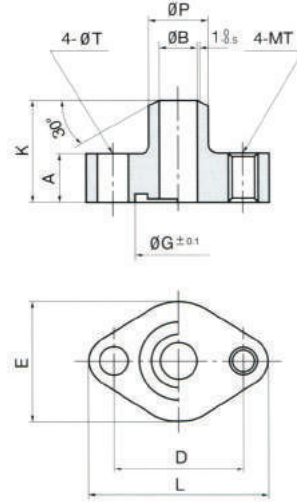
· 나사형  
(BSPT TYPE)



· 용접형  
(SOCKET WELD TYPE)



· 용접형  
(WELD ON TYPE)



O-RING GROOVE 상세도

### 나사형 / BSPT TYPE

형식	적용PIPE	E	L	D	K	A	ØB	P	G	T	O-RING AS568
AL-15T	Ø21.7	46	67	47.6	26	19	14.3	1/2"	31.52	M10	-214
AL-20T	Ø27.2	50	71.5	52.4	28	19	19.4	3/4"	37.87		-218
AL-25T	Ø34.0	50	71.5	52.4	32	19	25	1"	37.87	Ø11	-218
AL-32T	Ø42.7	70	95	69.9	36	22	32.9	1 1/4"	50.62	M12	-224
AL-40T	Ø48.6	70	95	69.9	42	24	38.4	1 1/2"	50.62		Ø13.5

### 용접형 / SOCKET WELD TYPE

형식	적용PIPE	E	L	D	K	A	ØB	P	G	T	O-RING AS568
AL-15S	Ø21.7	46	67	47.6	19	14	14.3	22.2	31.52	M10	-214
AL-20S	Ø27.2	50	71.5	52.4	23	16	19.4	27.7	37.87		-218
AL-25S	Ø34.0	50	71.5	52.4	28.5	17.5	25	34.5	37.87	Ø11	-218
AL-32S	Ø42.7	70	95	69.9	32	19	32.9	43.2	50.62	M12	-224
AL-40S	Ø48.6	70	95	69.9	36	22	38.4	49.1	50.62		Ø13.5

### 용접형 / WELD ON TYPE

형식	적용PIPE	E	L	D	K	A	ØB	P	G	T	O-RING AS568
AL-15W	Ø21.7	46	67	47.6	38	18	14.3	22.2	31.52	M10	-214
AL-20W	Ø27.2	50	71.5	52.4	38	18	19.4	27.7	37.87		-218
AL-25W	Ø34.0	50	71.5	52.4	38	18	25	34.5	37.87	Ø11	-218
AL-32W	Ø42.7	70	95	69.9	42	22	32.9	43.2	50.62	M12	-224
AL-40W	Ø48.6	70	95	69.9	45	25	38.4	49.1	50.62		Ø13.5

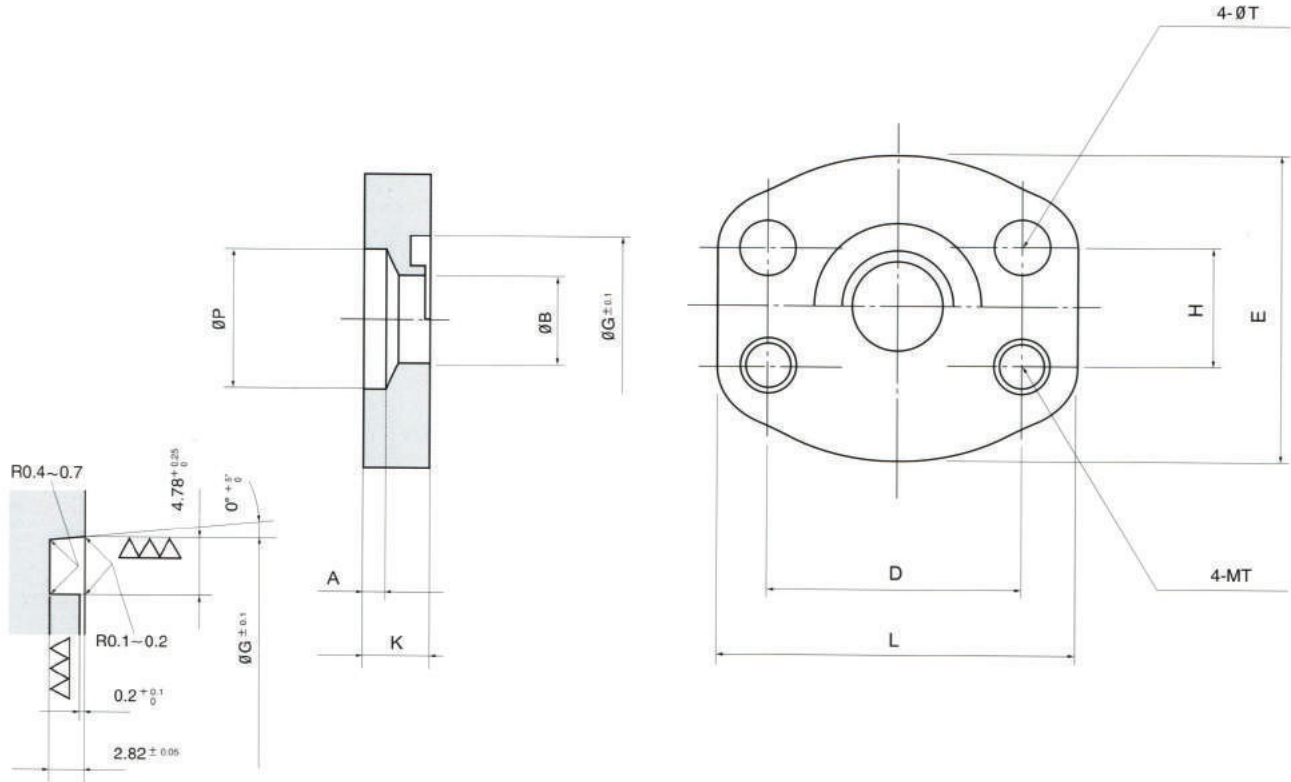
NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.

2. 주문방법 /AL-15 TO → O-RING GROOVE : O, NONE GROOVE : N

└─THREAD TYPE : T, SOCKET WELD : S, WELD ON : W

3. 상기 이외에 주문제작도 가능함.

# SOCKET WELD FLANGE



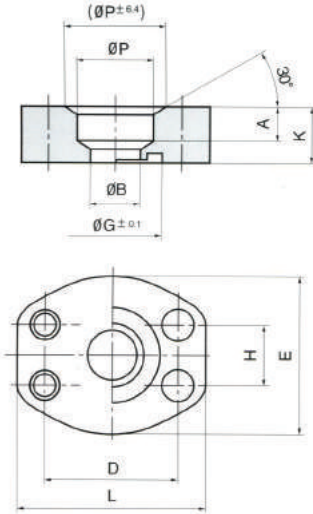
O-RING GROOVE 상세도

LOW PRESSURE 500PSI												
형식	적용PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
BB-15S	ø21.7	46	54	17.5	38.1	10	22.2	16	3	28.35	M8	ø9 -212
BB-20S	ø27.2	52	65	22.2	47.6	12	27.7	21.5	4	31.52	M10	-214
BB-25S	ø34.0	60	70	26.2	52.4	12	34.5	28	4	39.45	ø11	-219
BB-32S	ø42.7	73	79	30.2	58.7	12	43.2	36	4	50.62		-224
BB-40S	ø48.6	82	94	35.7	69.9	15	49.1	42	4	56.97	M12	-226
BB-50S	ø60.5	94	102	42.9	77.8	15	61.0	53	4	66.50	ø13.5	-229
BB-65S	ø76.3	106	114	50.8	88.9	15	77.0	68	4	82.37		-234
BB-80S	ø89.1	130	135	61.9	106.4	20	90.0	80	5	95.07	M16	-238
BB-90S	ø101.6	136	152	69.9	120.7	20	102.4	93	5	107.77	ø17.5	-242
BB-100S	ø114.3	146	162	77.8	130.2	25	115.1	106	6	123.65		-247
BB-125S	ø139.8	170	190	92.1	152.4	25	140.6	130	6	145.87		-254

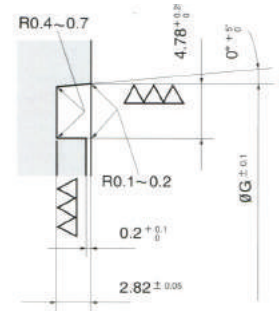
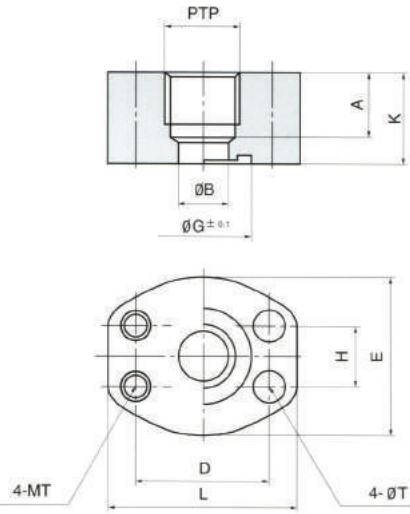
- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /BB-125 S O → O-RING GROOVE : O, NONE GROOVE : N  
 SIZE  
 3. 상기 이외에 주문제작도 가능함.

## THREAD FLANGE, SOCKET WELD FLANGE

· 용접형  
(SOCKET WELD TYPE)



· 나사형  
(BSPT TYPE)



O-RING GROOVE 상세도

### 나사형 / BSPT TYPE 3000PSI

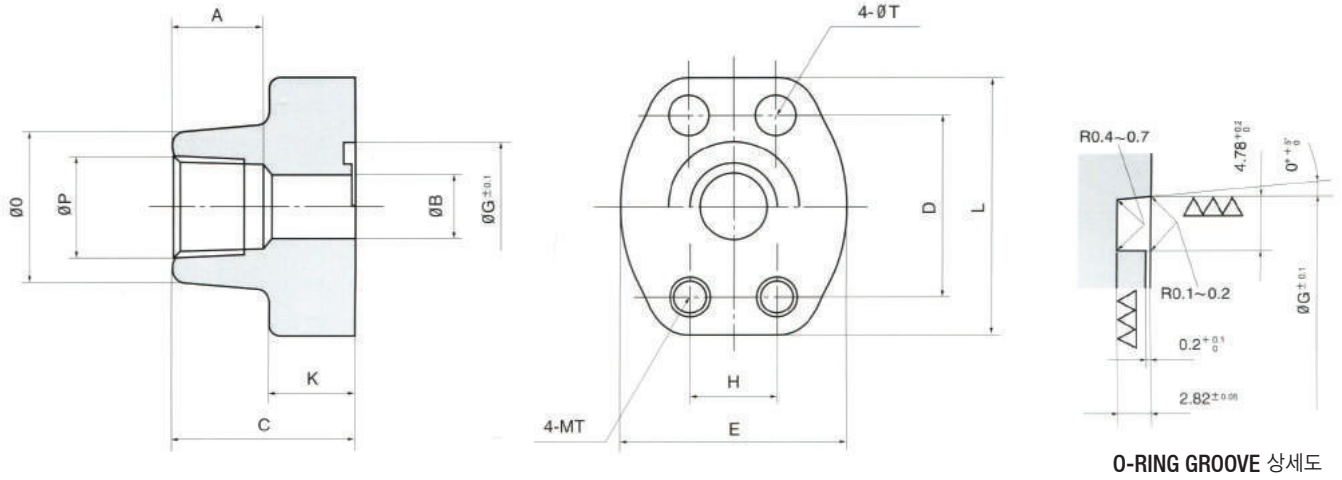
형식	적용PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
CL-15T	Ø21.7	46	54	17.5	38.1	26	1/2"	14	19	26.75	M8 Ø9	-211
CL-20T	Ø27.2	52	65	22.2	47.6	28	3/4"	19	19	31.52	M10	-214
CL-25T	Ø34.0	60	70	26.2	52.4	32	1"	25	19	39.45	Ø11	-219
CL-32T	Ø42.7	73	79	30.2	58.7	36	1 1/4"	32	22	50.62		-222
CL-40T	Ø48.6	82	94	35.7	69.9	42	1 1/2"	38	24	56.97	M12	-225
CL-50T	Ø60.5	94	102	42.9	77.8	42	2"	51	30	66.50	Ø13.5	-228
CL-65T	Ø76.3	106	114	50.8	88.9	48	2 1/2"	63	30	82.37		-232
CL-80T	Ø89.1	130	135	61.9	106.4	48	3"	73	34	95.07	M16 Ø17.5	-237

### 용접형 / SOCKET WELD TYPE 3000PSI

형식	적용PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
CL-15S	Ø21.7	46	54	17.5	38.1	16	22.2	14	10	26.75	M8 Ø9	-211
CL-20S	Ø27.2	52	65	22.2	47.6	19	27.7	19	14	31.52	M10	-214
CL-25S	Ø34.0	60	70	26.2	52.4	23	34.5	25	16	39.45	Ø11	-219
CL-32S	Ø42.7	73	79	30.2	58.7	28	43.2	32	18	50.62		-222
CL-40S	Ø48.6	82	94	35.7	69.9	32	49.1	38	19	56.97	M12	-225
CL-50S	Ø60.5	94	102	42.9	77.8	36	61.0	51	22	66.50	Ø13.5	-228
CL-65S	Ø76.3	106	114	50.8	88.9	48	77.0	63	25	82.37		-232
CL-80S	Ø89.1	130	135	61.9	106.4	54	90.0	73	32	95.07	M16	-237
*CL-90S	Ø101.6	136	152	69.9	120.7	38	102.4	89	30	107.77	Ø17.5	-241
*CL-100S	Ø114.3	146	162	77.8	130.2	38	115.1	99	30	123.65		-245

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /CL-15 T C → O-RING GROOVE : O, NONE GROOVE : N  
 SIZE □ THREAD TYPE : T, SOCKET WELD : S, WELD ON : W  
 3. \*표시한 것은 사용압력 500PSI용임.

## THREAD BOSS TYPE FLANGE - BSPT

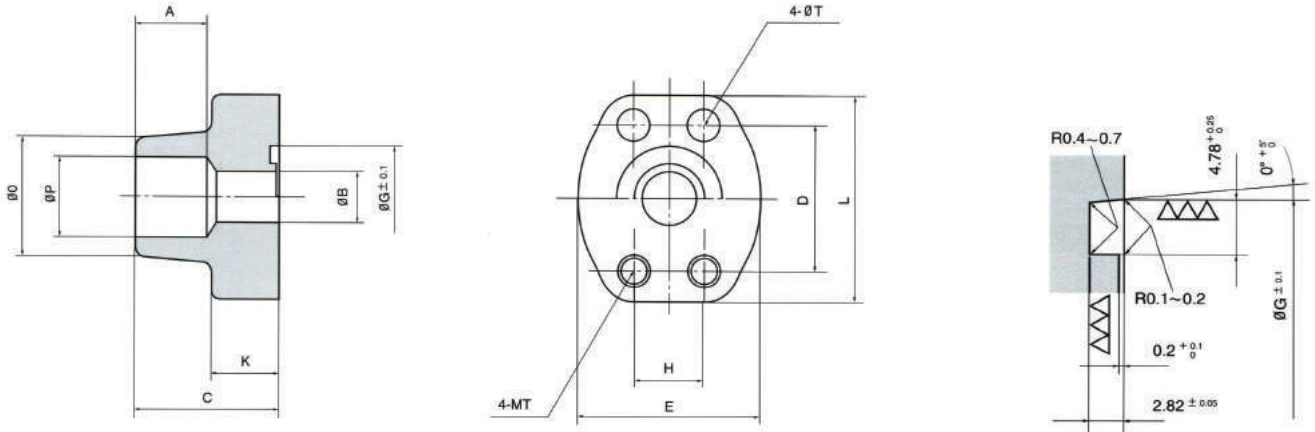


3000PSI														
형식	적용PIPE	E	L	H	D	C	K	P	B	A	O	G	T	O-RING AS568
DL-15T	ø21.7	46	54	17.5	38.1	36	16	1/2"	13	19	32	26.75	M8 <sup>ø9</sup>	-211
DL-20T	ø27.2	52	65	22.2	47.6	38	18	3/4"	19	19	38	31.52	M10	-214
DL-25T	ø34.0	60	70	26.2	52.4	38	18	1"	25	19	44	39.45	ø11	-219
DL-32T	ø42.7	73	79	30.2	58.7	42	22	1 1/4"	32	22	52	50.62		-222
DL-40T	ø48.6	82	94	35.7	69.9	45	25	1 1/2"	38	24	58	56.97	M12	-225
DL-50T	ø60.5	94	102	42.9	77.8	50	25	2"	51	30	72	66.50	ø13.5	-228
DL-65T	ø76.3	106	114	50.8	88.9	50	25	2 1/2"	63	30	88	82.37		-232
DL-80T	ø89.1	130	135	61.9	106.4	53	28	3"	73	34	101	95.07	M16	-237
DL-90T	ø101.6	136	152	69.9	120.7	53	28	3 1/2"	89	34	114	107.77	ø17.5	-241
DL-100T	ø114.3	146	162	77.8	130.2	53	28	4"	99	34	126	123.65		-245

6000PSI														
형식	적용PIPE	E	L	H	D	C	K	P	B	A	O	G	T	O-RING AS568
DH-10T	ø17.3	46	54	18.2	40.5	36	16	3/8"	11	19	28	26.75	M8 <sup>ø9</sup>	-211
DH-20T	ø27.2	55	71	23.8	50.8	42	22	3/4"	19	22	38	31.52	M10 <sup>ø11</sup>	-214
DH-25T	ø34.0	65	81	27.8	57.2	45	25	1"	25	24	44	39.45	M12 <sup>ø13.5</sup>	-219
DH-32T	ø42.7	78	94	31.8	66.7	48	28	1 1/4"	32	25	55	50.62	M14 <sup>ø15.5</sup>	-222
DH-40T	ø48.6	94	112	36.5	79.4	50	30	1 1/2"	38	28	60	56.97	M16 <sup>ø17.5</sup>	-225
DH-50T	ø60.5	114	134	44.5	96.8	63	38	2"	51	30	72	66.50	M20 <sup>ø22</sup>	-228

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /DL-15 T O → O-RING GROOVE : O, NONE GROOVE : N  
 PRESSURE RANGE ┘ THREAD TYPE  
 3. 상기 이외에 주문제작도 가능함.

## SOCKET WELD BOSS TYPE FLANGE



O-RING GROOVE 상세도

### 3000PSI

형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	G	T	O-RING AS568
EL-15S	ø21.7	46	54	17.5	38.1	36	16	22.2	13	19	32	26.75	M8 / ø9	-211
EL-20S	ø27.2	52	65	22.2	47.6	38	18	27.7	19	19	38	31.52	M10 / ø11	-214
EL-25S	ø34.0	60	70	26.2	52.4	38	18	34.5	25	19	44	39.45	M12 / ø13.5	-219
EL-32S	ø42.7	73	79	30.2	58.7	42	22	43.2	32	22	52	50.62	M16 / ø17.5	-222
EL-40S	ø48.6	82	94	35.7	69.9	45	25	49.1	38	24	58	56.97	M10 / ø11	-225
EL-50S	ø60.5	94	102	42.9	77.8	50	25	61.0	51	30	72	66.50	M12 / ø13.5	-228
EL-65S	ø76.3	106	114	50.8	88.9	50	25	77.0	63	30	88	82.37	M16 / ø17.5	-232
EL-80S	ø89.1	130	135	61.9	106.4	53	28	90.0	73	34	101	95.07	M20 / ø22	-237
EL-90S	ø101.6	136	152	69.9	120.7	53	28	102.4	89	34	114	107.77	M16 / ø17.5	-241
EL-100S	ø114.3	146	162	77.8	130.2	53	28	115.1	99	34	126	123.65	M20 / ø22	-245

### 6000PSI

형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	G	T	O-RING AS568
EH-10S	ø17.3	46	54	18.2	40.5	36	16	17.8	11	19	28	26.75	M8 / ø9	-211
EH-20S	ø27.2	55	71	23.8	50.8	42	22	27.7	19	22	38	31.52	M10 / ø11	-214
EH-25S	ø34.0	65	81	27.8	57.2	45	25	34.5	25	24	44	39.45	M12 / ø13.5	-219
EH-32S	ø42.7	78	94	31.8	66.7	48	28	43.2	32	25	55	50.62	M14 / ø15.5	-222
EH-40S	ø48.6	94	112	36.5	79.4	50	30	49.1	38	28	60	56.97	M16 / ø17.5	-225
EH-50S	ø60.5	114	134	44.5	96.8	63	38	61.0	51	30	72	66.50	M20 / ø22	-228

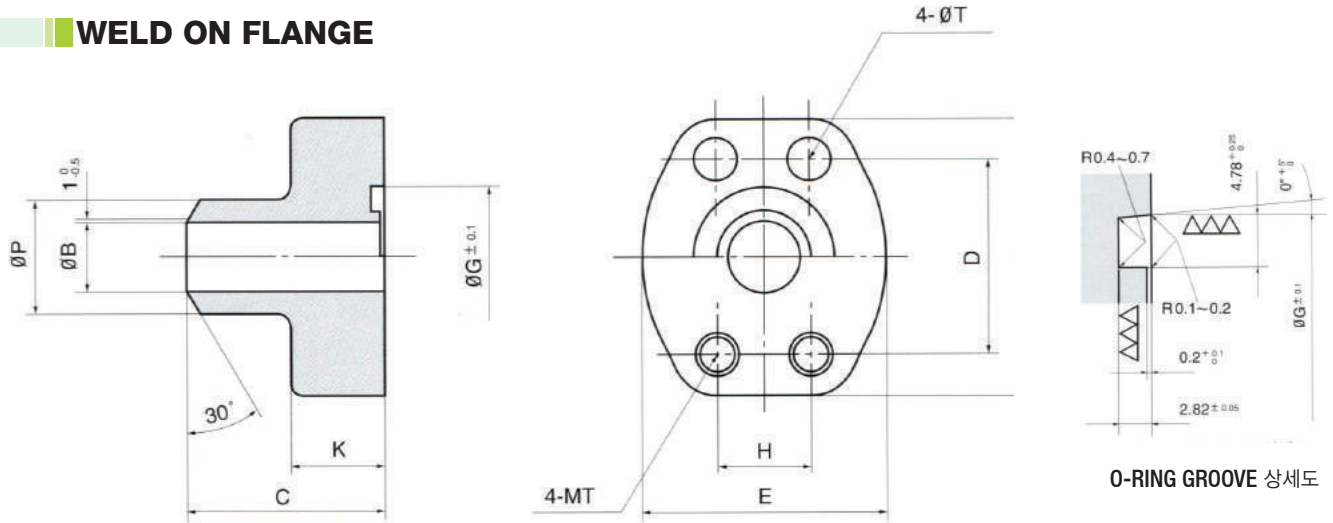
NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.

2. 주문방법 /EL-15 S O → O-RING GROOVE : O, NONE GROOVE : N  
PRESSURE RANGE | SOCKET TYPE

3. 상기 이외에 주문제작도 가능함.



## WELD ON FLANGE



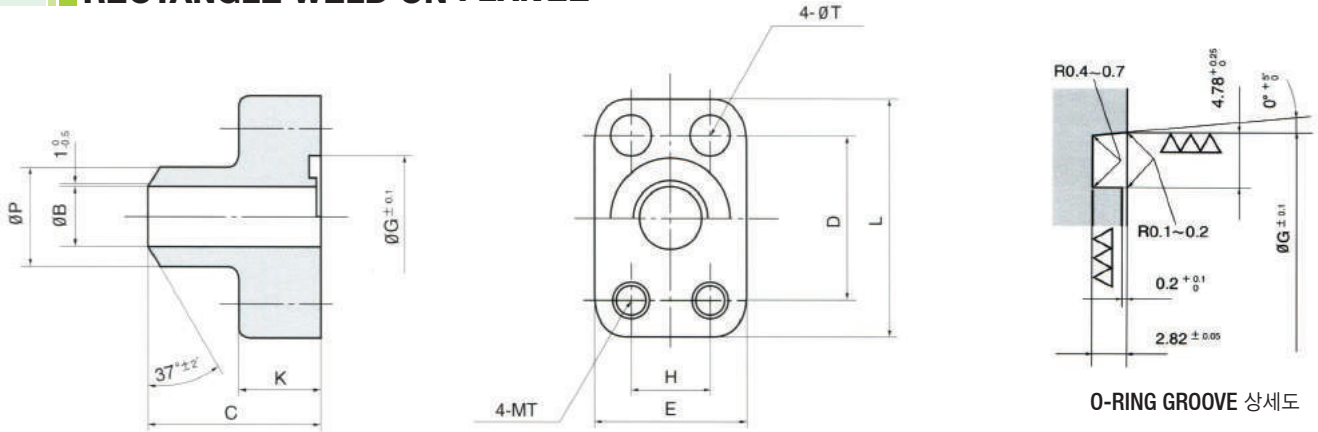
O-RING GROOVE 상세도

3000PSI													
형식	NORMAL SIZE		E	L	H	D	C	K	P	B	G	T	O-RING AS568
	FLANGE	PIPE											
FL-01W	15A	21.7	46	54	17.5	38.1	36	16	22.2	13	26.75	M8	-211
FL-02W		17.3							ø9				
FL-03W	20A	27.2	52	65	22.2	47.6	38	18	27.7	19	31.52	M10	-214
FL-04W		21.7							13				
FL-05W	25A	34.0	60	70	26.2	52.4	38	18	34.5	25	39.45	M10	-219
FL-06W		27.2							19				
FL-07W		21.7							13				
FL-08W	32A	42.7	73	79	30.2	58.7	42	22	43.2	32	50.62	M10	-222
FL-09W		34.0							25				
FL-10W		27.2							19				
FL-11W	40A	48.6	82	94	35.7	69.9	45	25	49.1	38	56.97	M12	-225
FL-12W		42.7							32				
FL-13W	50A	ø60.5	94	104	42.9	77.8	50	25	61.0	51	66.50	ø13.5	-228
FL-14W	65A	ø76.3	106	114	50.8	88.9	50	25	77.0	63	82.37	ø13.5	-232
FL-15W	80A	ø89.1	130	135	61.9	106.4	53	28	90.0	73	95.07	M16	-237
FL-16W	90A	ø101.6	136	152	69.9	120.7	53	28	102.4	89	107.77	M16	-241
FL-17W	100A	ø114.3	146	162	77.8	130.2	53	28	115.1	99	123.65	ø17.5	-245

6000PSI													
형식	NORMAL SIZE		E	L	H	D	C	K	P	B	G	T	O-RING AS568
	FLANGE	PIPE											
FH-10W	10A	ø17.3	46	54	18.2	40.5	38	18	17.8	11	26.75	M8	-211
FH-20W	20A	ø27.2	55	71	23.8	50.8	42	22	27.7	19	31.52	M10	-214
FH-25W	25A	ø34.0	65	81	27.8	57.2	45	25	34.5	25	39.45	M12	-219
FH-32W	32A	ø42.7	78	94	31.8	66.7	48	28	43.2	32	50.62	M14	-222
FH-40W	40A	ø48.6	94	112	36.5	79.4	50	30	49.1	38	56.97	M16	-225
FH-50W	50A	ø60.5	114	134	44.5	96.8	63	38	61.0	51	66.50	M20	-228

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /FL-15W O → O-RING GROOVE : O, NONE GROOVE : N  
 PRESSURE RANGE WELD ON  
 3. 상기 이외에 주문제작도 가능함.

## RECTANGLE WELD ON FLANGE

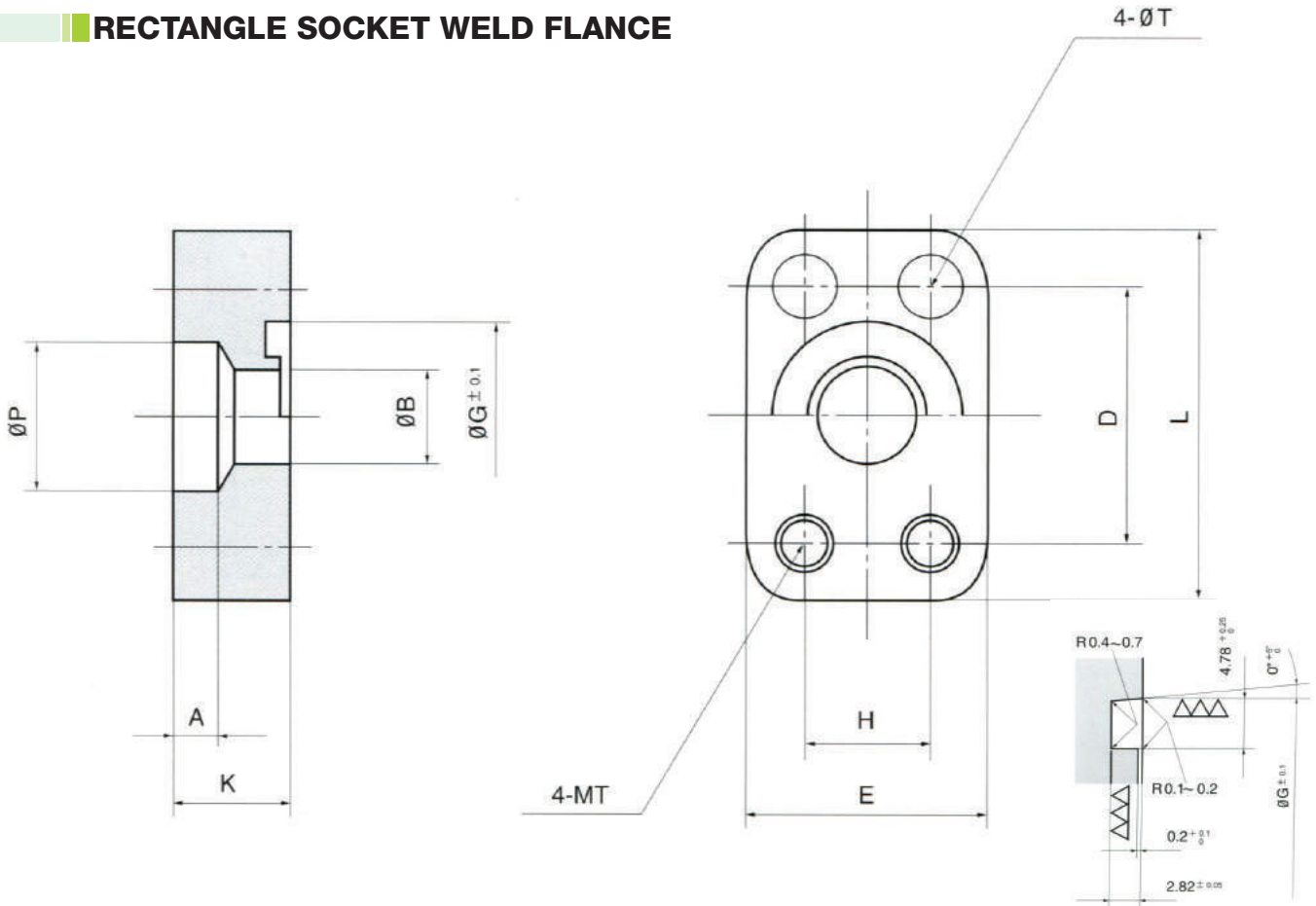


3000PSI													
형 식	NORMAL SIZE		E	L	H	D	C	K	P	B	G	T	O-RING AS568
	FLANGE	PIPE											
GL-01W	15A	21.7	34	54	17.5	38.1	36	16	22.2	13	26.75	M8	-211
GL-02W		17.3							ø9				
GL-03W	20A	27.2	41	65	22.2	47.6	38	18	27.7	19	31.52	M10	-214
GL-04W		21.7							ø11				
GL-05W	25A	34.0	48	70	26.2	52.4	38	18	34.5	25	39.45	ø11	-219
GL-06W		27.2											
GL-07W		21.7							22.2	13			
GL-08W	32A	42.7	54	79	30.2	68.7	42	22	43.2	32	50.62	M12	-222
GL-09W		34.0							ø15.5				
GL-10W		27.2							27.7	19			
GL-11W	40A	48.6	64	94	35.7	69.9	45	25	49.1	38	56.97	M16	-225
GL-12W		42.7							ø17.5				

6000PSI													
형 식	NORMAL SIZE		E	L	H	D	C	K	P	B	G	T	O-RING AS568
	FLANGE	PIPE											
GH-01W	15A	21.7	34	54	18.2	40.5	38	18	22.2	13	26.75	M8	-211
GH-02W		17.3							ø9				
GH-03W	20A	27.2	48	71	23.8	50.8	42	22	27.7	19	31.52	M10	-214
GH-04W		21.7							ø11				
GH-05W	25A	34.0	54	81	27.8	57.2	45	25	34.5	25	39.45	ø11	-219
GH-06W		27.2											
GH-07W		21.7							22.2	13			
GH-08W	32A	42.7	60	94	31.8	66.7	48	28	43.2	32	50.62	M12	-222
GH-09W		34.0							ø15.5				
GH-10W		27.2							27.7	19			
GH-11W	40A	48.6	70	112	36.5	79.4	50	30	49.1	38	56.97	M16	-225
GH-12W		42.7							ø17.5				

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /GL-01W O → O-RING GROOVE : O, NONE GROOVE : N  
 PRESSURE RANGE WELD ON  
 3. 상기 이외에 주문제작도 가능함.

## RECTANGLE SOCKET WELD FLANGE

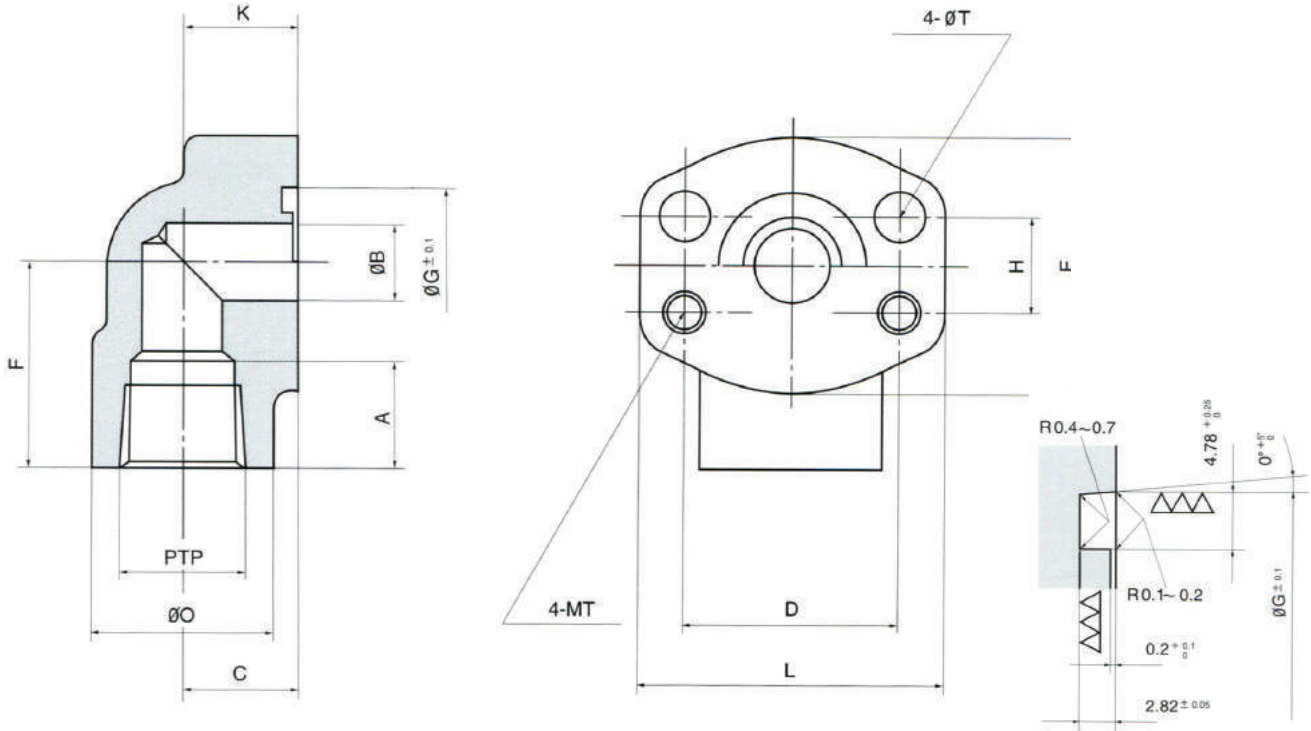


O-RING GROOVE 상세도

3000PSI													
형 식	NORMAL SIZE		E	L	H	D	K	P	B	A	G	T	O-RING AS568
	FLANGE	PIPE											
HL-01S	15A	21.7	34	54	17.5	38.1	16	22.2	13	6	26.75	M8	-211
HL-02S		17.3						17.8	10				
HL-03S	20A	27.2	41	65	22.2	47.6	16	27.7	19	6	31.52	M10	-214
HL-04S		21.7						22.2	13				
HL-05S	25A	34.0	48	70	26.2	52.4	16	34.5	25	6	39.45	M10	-219
HL-06S		27.2						27.7	19				
HL-07S		21.7						22.2	13				
HL-08S	32A	42.7	54	79	30.2	58.7	16	43.2	32	6	50.62	M10	-222
HL-09S		34.0						34.5	25				
HL-10S		27.2						27.7	19				
HL-11S	40A	48.6	64	94	35.7	69.9	16	49.1	38	6	56.97	M12	-225
HL-12S		42.7						43.2	32				
HL-13S	50A	60.5	76	102	42.9	77.8	16	61.0	51	6	66.50	M12	-228
HL-14S		48.6						49.1	38				

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /HL-01S O → O-RING GROOVE : O, NONE GROOVE : N  
 SOCKET WELD  
 3. 상기 이외에 주문제작도 가능함.

## THREAD FLANGE 90°



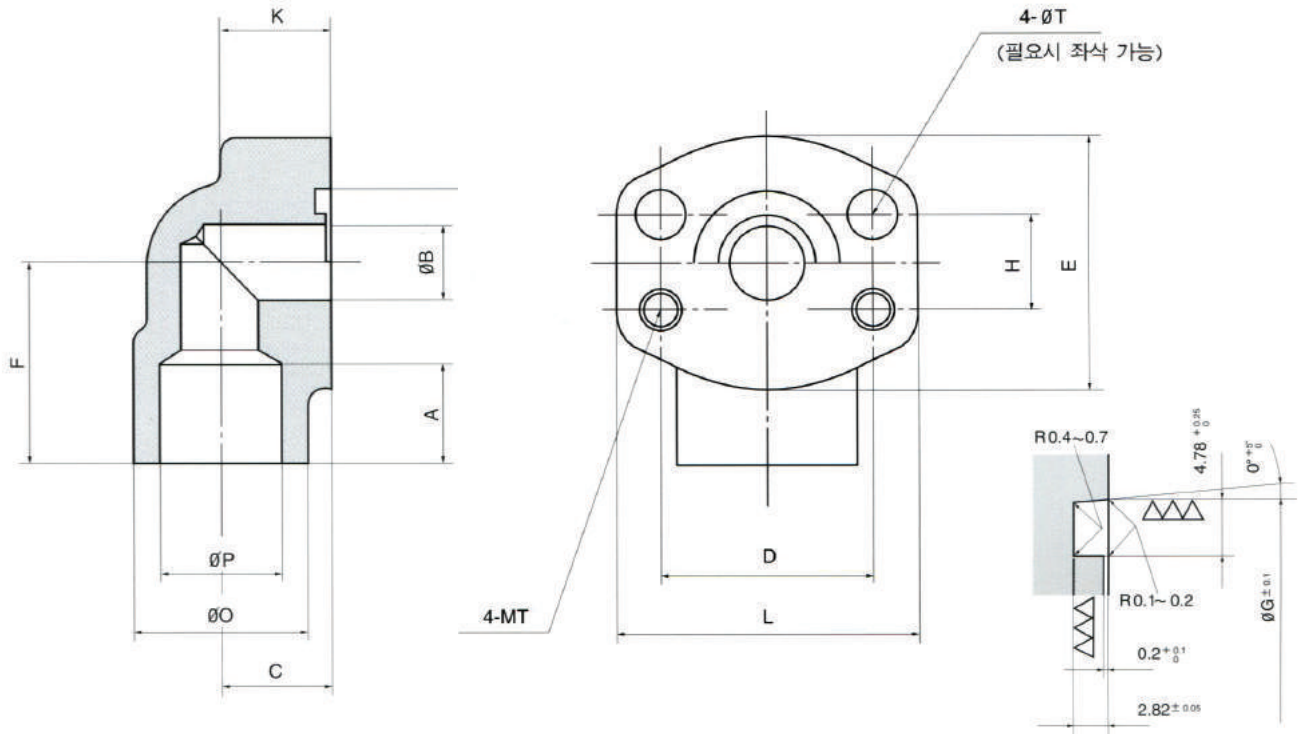
O-RING GROOVE 상세도

3000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
JL-15T	ø21.7	46	54	17.5	38.1	20	20	1/2"	13	19	32	37	26.75	M8 <sub>ø9</sub>	-211
JL-20T	ø27.2	52	65	22.2	47.6	24	24	3/4"	19	19	38	38	31.52	M10	-214
JL-25T	ø34.0	60	70	26.2	52.4	28	28	1"	25	19	44	43	39.45	ø11	-219
JL-32T	ø42.7	73	79	30.2	58.7	34	34	1 1/4"	32	22	52	51	50.62	ø11	-222
JL-40T	ø48.6	82	94	35.7	69.9	38	38	1 1/2"	38	24	58	56	56.97	M12	-225
JL-50T	ø60.5	94	102	42.9	77.8	42	42	2"	51	30	72	65	66.50	ø13.5	-228

6000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
JH-15T	ø21.7	46	54	18.2	40.5	20	20	1/2"	13	19	32	37	26.75	M8 <sub>ø9</sub>	-211
JH-20T	ø27.2	55	71	23.8	50.8	28	28	3/4"	19	22	38	43	31.52	M10 <sub>ø11</sub>	-214
JH-25T	ø34.0	65	81	27.8	57.2	34	34	1"	25	24	44	51	39.45	M12 <sub>ø13.5</sub>	-219
JH-32T	ø42.7	78	94	31.8	66.7	38	38	1 1/4"	32	25	55	56	50.62	M14 <sub>ø15.5</sub>	-222
JH-40T	ø48.6	94	112	36.5	79.4	42	42	1 1/2"	38	28	60	65	56.97	M16 <sub>ø17.5</sub>	-225

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /JL-15 T O → O-RING GROOVE : O, NONE GROOVE : N  
 PRESSURE RANGE ┘ THREAD TYPE  
 3. 상기 이외에 주문제작도 가능함.

# SOCKET WELD FLANGE 90°



O-RING GROOVE 상세도

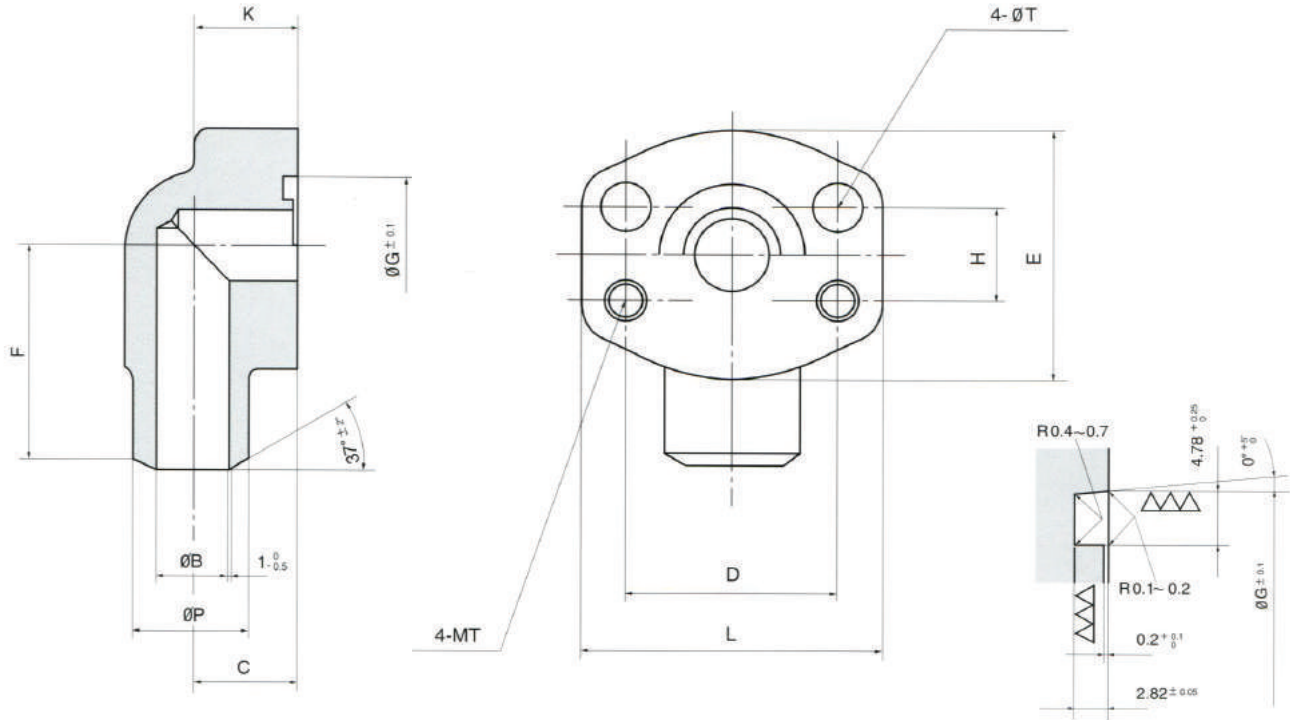
3000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
KL-15S	ø21.7	46	54	17.5	38.1	20	20	22.2	13	19	32	37	26.75	M8 / ø9	-211
KL-20S	ø27.2	52	65	22.2	47.6	24	24	27.7	19	19	38	38	31.52	M10	-214
KL-25S	ø34.0	60	70	26.2	52.4	28	28	34.5	25	19	44	43	39.45	ø11	-219
KL-32S	ø42.7	73	79	30.2	58.7	34	34	43.2	32	22	52	51	50.62		-222
KL-40S	ø48.6	82	94	35.7	69.9	38	38	49.1	38	24	58	56	56.97	M12	-225
KL-50S	ø60.5	94	102	42.9	77.8	42	42	61.0	51	30	72	65	66.50	ø13.5	-228

6000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
KH-15S	ø17.3	46	54	18.2	40.5	20	20	22.2	13	19	32	37	26.75	M8 / ø9	-211
KH-20S	ø27.2	55	71	23.8	50.8	28	28	27.7	19	22	38	43	31.52	M10 / ø11	-214
KH-25S	ø34.0	65	81	27.8	57.2	34	34	34.5	25	24	44	51	39.45	M12 / ø13.5	-219
KH-32S	ø42.7	78	94	31.8	66.7	38	38	43.2	32	25	55	56	50.62	M14 / ø15.5	-222
KH-40S	ø48.6	94	112	36.5	79.4	42	42	49.1	38	28	60	65	56.97	M16 / ø17.5	-225

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /KL-15S O → O-RING GROOVE : O, NONE GROOVE : N  
 SOCKET WELD  
 3. 상기 이외에 주문제작도 가능함.



## WELD ON FLANGE 90°



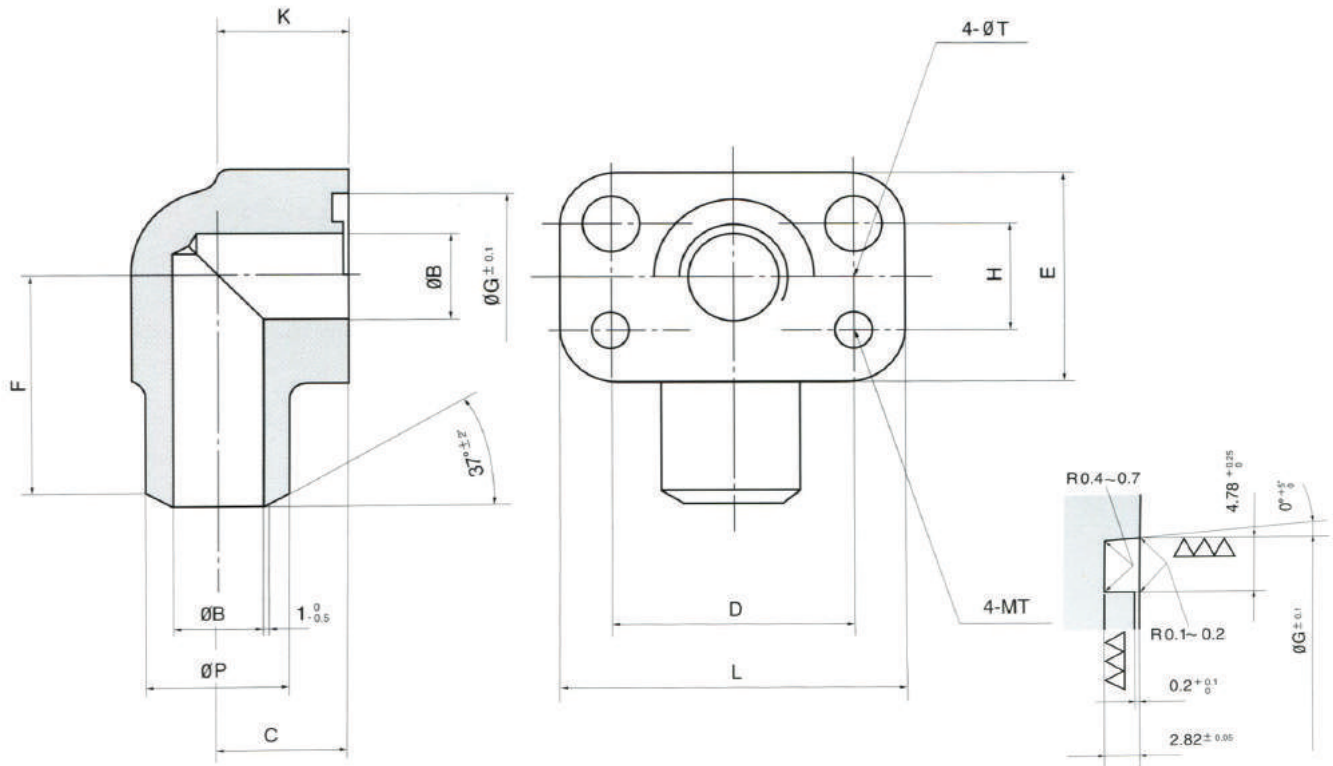
O-RING GROOVE 상세도

3000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
LL-15W	ø21.7	46	54	17.5	38.1	20	20	22.2	13	19	32	37	26.75	M8 <sub>ø9</sub>	-211
LL-20W	ø27.2	52	65	22.2	47.6	24	24	27.7	19	19	38	38	31.52	M10	-214
LL-25W	ø34.0	60	70	26.2	52.4	28	28	34.5	25	19	44	43	39.45	ø11	-219
LL-32W	ø42.7	73	79	30.2	58.7	34	34	43.2	32	22	52	51	50.62	ø11	-222
LL-40W	ø48.6	82	94	35.7	69.9	38	38	49.1	38	24	58	56	56.97	M12	-225
LL-50W	ø60.5	94	102	42.9	77.8	42	42	61.0	51	30	72	65	66.50	ø13.5	-228

6000PSI															
형 식	적용PIPE	E	L	H	D	C	K	P	B	A	O	F	G	T	O-RING AS568
KH-15S	ø17.3	46	54	18.2	40.5	20	20	22.2	13	19	32	37	26.75	M8 <sub>ø9</sub>	-211
KH-20S	ø27.2	55	71	23.8	50.8	28	28	27.7	19	22	38	43	31.52	M10 <sub>ø11</sub>	-214
KH-25S	ø34.0	65	81	27.8	57.2	34	34	34.5	25	24	44	51	39.45	M12 <sub>ø13.5</sub>	-219
KH-32S	ø42.7	78	94	31.8	66.7	38	38	43.2	32	25	55	56	50.62	M14 <sub>ø15.5</sub>	-222
KH-40S	ø48.6	94	112	36.5	79.4	42	42	49.1	38	28	60	65	56.97	M16 <sub>ø17.5</sub>	-225

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /LL-15WQ → O-RING GROOVE : O, NONE GROOVE : N  
 3. 상기 이외에 주문제작도 가능함.

## WELD ON RECTANGLE FLANGE - 90°



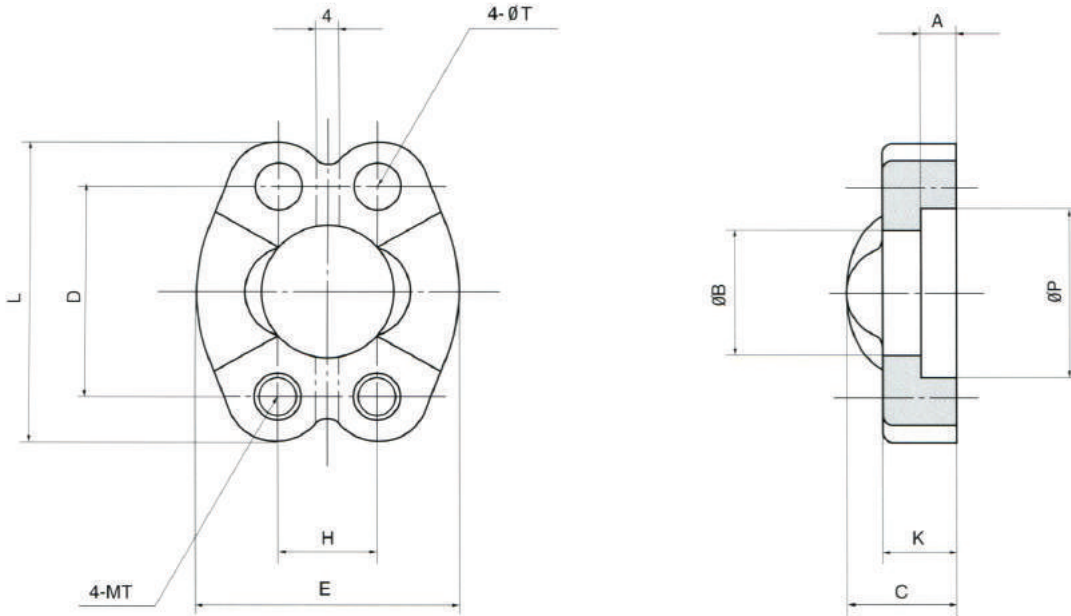
O-RING GROOVE 상세도

3000PSI														
영 식	NORMAL SIZE		E	L	H	D	C	K	P	B	F	G	T	O-RING AS568
	FLANGE	PIPE												
ML-15W	15A	21.7	34	54	17.5	38.1	20	20	22.2	13	37	26.75	M8 <sup>ø9</sup>	-211
ML-20W	20A	27.2	42	68	22.2	47.6	24	24	27.7	19	41	31.52	M10 <sup>ø11</sup>	-214
ML-25W	25A	34.0	48	72	26.2	52.4	28	28	34.5	23	44	39.45		-219
ML-32W	32A	42.7	56	79	30.2	58.7	34	34	43.2	31	48	50.62	M12 <sup>ø13.5</sup>	-222
ML-40W	40A	48.6	64	94	35.7	69.9	38	38	49.1	35	52	56.97		-225
ML-50W	50A	60.5	72	102	42.9	77.8	42	42	61.0	48	56	66.50		-228

6000PSI														
영 식	NORMAL SIZE		E	L	H	D	C	K	P	B	F	G	T	O-RING AS568
	FLANGE	PIPE												
MH-15W	15A	21.7	34	54	18.2	40.5	20	20	22.2	13	37	26.75	M8 <sup>ø9</sup>	-211
MH-20W	20A	27.2	48	71	23.8	50.8	28	28	27.7	19	44	31.52	M10 <sup>ø11</sup>	-214
MH-25W	25A	34.0	54	81	27.8	57.2	34	34	34.5	25	47	39.45	M12 <sup>ø13.5</sup>	-219
MH-32W	32A	42.7	60	94	31.8	66.7	38	38	43.2	32	50	50.62	M14 <sup>ø15.5</sup>	-222
MH-40W	40A	48.6	70	112	36.5	79.4	42	42	49.1	38	55	56.97	M16 <sup>ø17.5</sup>	-225

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /ML-15WQ → O-RING GROOVE : O, NONE GROOVE : N  
 3. 상기 이외에 주문제작도 가능함.

## SPLIT FLANGE



### 3000PSI

형 식	SIZE	E	L	H	D	C	K	P	B	A	T
NL-15	15A	46	54	17.5	38.1	19	13	31.0	24.3	6.2	M8 / $\phi 8.5$
NL-20	20A	52	65	22.2	47.6	22	14	38.9	32.1	6.2	M8
NL-25	25A	60	70	26.2	52.4	24	16	45.2	38.5	7.5	$\phi 10.5$
NL-32	32A	73	79	30.2	58.7	22	14	51.6	43.7	7.5	
NL-40	40A	82	94	35.7	69.9	25	16	61.1	50.8	7.5	M12
NL-50	50A	94	102	42.9	77.8	26	16	72.2	62.7	9.0	$\phi 12.5$
NL-65	65A	106	114	50.8	88.9	38	19	84.9	74.9	9.0	
NL-80	80A	130	135	61.9	106.4	41	22	102.4	90.9	9.0	M16
NL-90	90A	136	152	69.9	120.7	45	24	115.3	102.3	10.8	$\phi 16.5$
NL-100	100A	146	162	77.8	130.2	45	24	128.4	115.3	10.8	

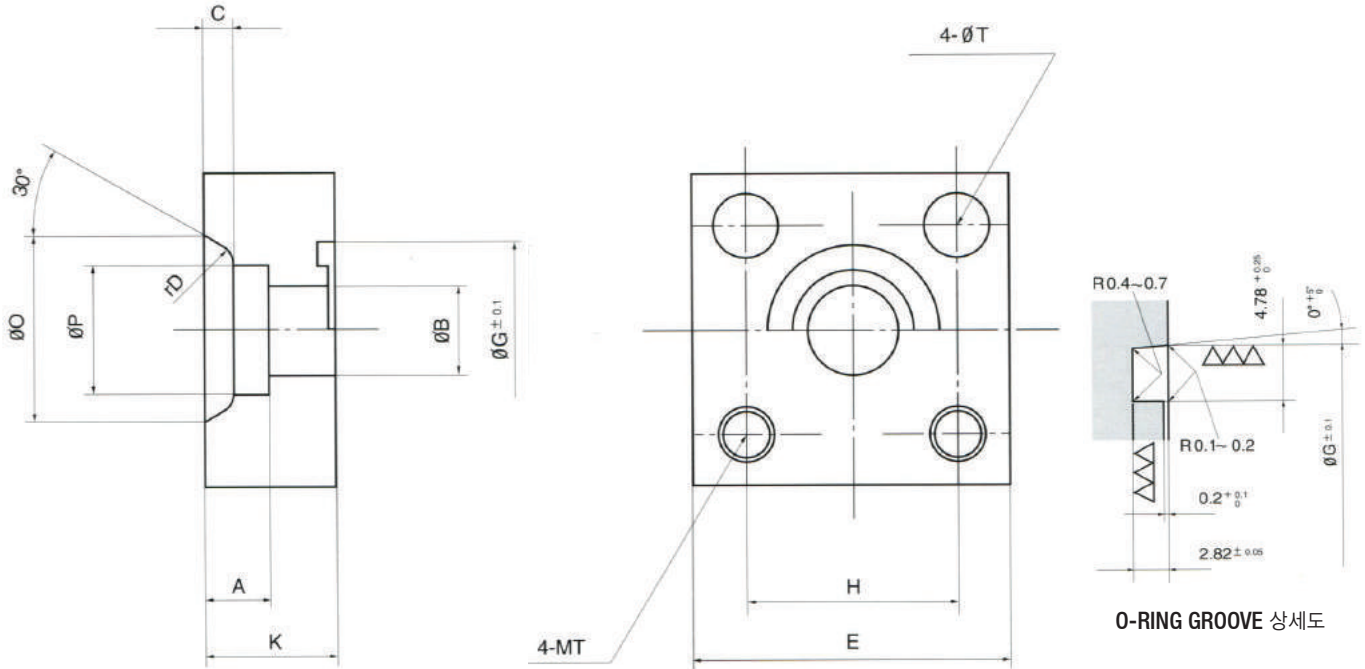
### 6000PSI

형 식	SIZE	E	L	H	D	C	K	P	B	A	T
NH-15	15A	46	54	18.2	40.5	22	16	32.5	24.6	7.2	M8 / $\phi 8.5$
NH-20	20A	55	71	23.8	50.8	23	19	42.0	32.5	8.3	M10 / $\phi 10.5$
NH-25	25A	65	81	27.8	57.2	33	24	48.4	38.9	9.0	M12 / $\phi 12.5$
NH-32	32A	78	94	31.8	66.7	38	27	54.8	44.5	9.8	M14 / $\phi 14.5$
NH-40	40A	94	112	36.5	79.4	43	30	64.3	51.6	12.1	M16 / $\phi 16.5$
NH-50	50A	114	134	44.5	96.8	52	37	80.2	67.6	12.1	M20 / $\phi 20.5$

NOTE : 1. 상기 이외에 주문제작도 가능함.

2. 주문방법 /NL-15T → TAP : T, BOLT HOLE : H

## SQUARE FLANGE - SOCKET WELD



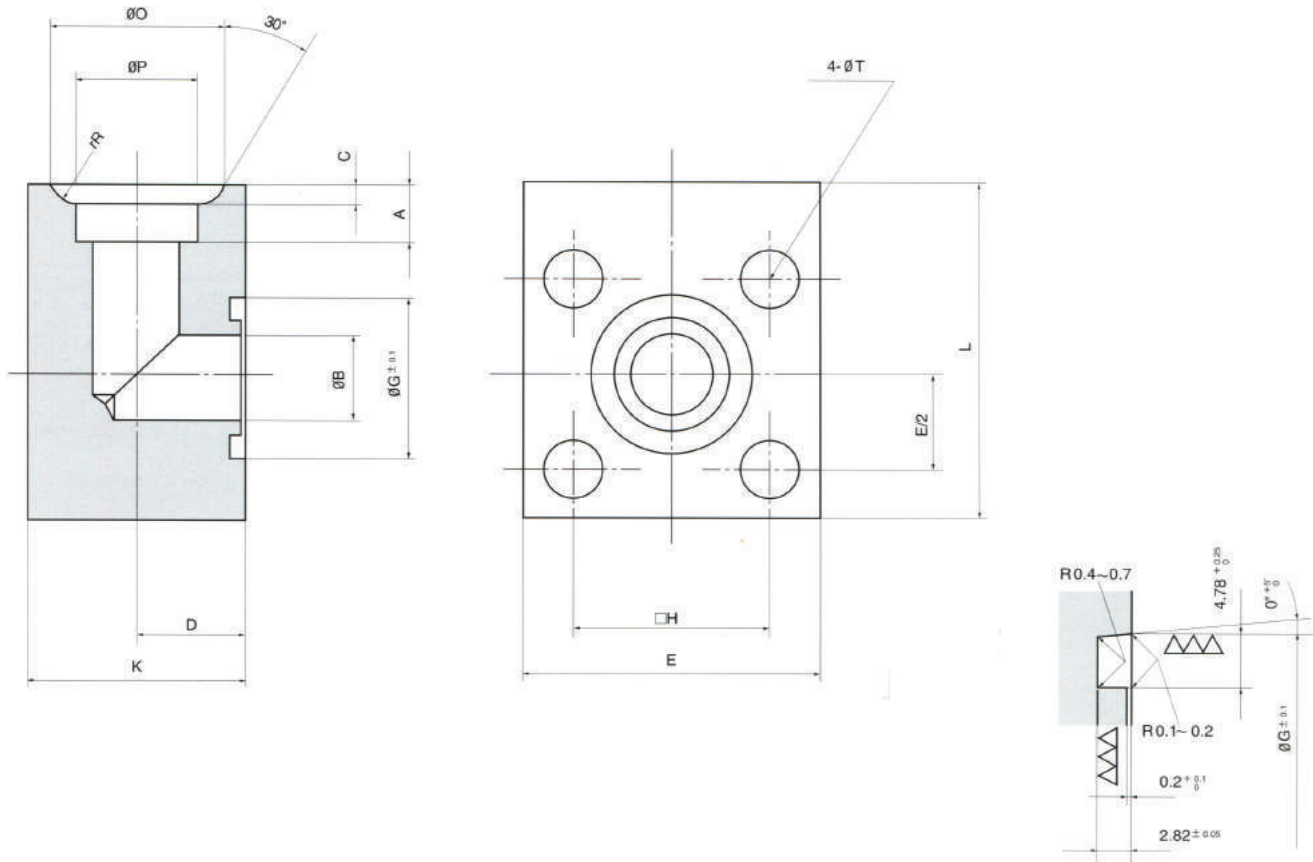
KS SHA 및 SHB														
형 식	적용PIPE	E	H	D	C	K	P	B	A	O	G	T	O-RING AS568	
SHA-15	21.7	63	40	5	3.5	22	22.2	16	11	32	30	M10	G25	
SHA-20	27.2	68	45	5	4.0	22	27.7	20	12	38	35	ø11	G30	
SHA-25	34.0	80	53	5	4.0	28	34.5	25	14	45	40	M12	G35	
SHA-32	42.7	90	63	5	6.0	28	43.2	31.5	16	56	45	ø13.5	G40	
SHA-40	48.6	100	70	5	7.0	36	49.1	37.5	18	63	55	M16	G50	
SHA-50	60.5	112	80	5	7.0	36	61.1	47.5	20	75	65	ø17.5	G60	
SHA-65	76.3	140	100	5	9.5	45	77.1	60	22	95	80	M20	ø22	G75
SHA-80	89.1	155	112	6	11.0	45	90.0	71	25	108	90	M22	ø24	G85

KS SSA 및 SSB														
형 식	적용PIPE	E	H	D	C	K	P	B	A	O	G	T	O-RING AS568	
SSA-15	21.7	54	36	5	3.5	22	22.2	16	11	32	30	M10	G25	
SSA-20	27.2	58	40	5	4.0	22	27.7	20	12	38	35	ø11	G30	
SSA-25	34.0	68	48	5	4.0	28	34.5	25	14	45	40	M12	G35	
SSA-32	42.7	76	56	5	6.0	28	43.2	31.5	16	56	45	ø13.5	G40	
SSA-40	48.6	92	65	5	7.0	36	49.1	37.5	18	63	55	M16	G50	
SSA-50	60.5	100	73	5	7.0	36	61.1	47.5	20	75	65	ø17.5	G60	
SSA-65	76.3	128	92	5	9.5	45	77.1	60	22	95	80	M20	ø22	G75
SSA-80	89.1	140	103	6	11.0	45	90.0	71	25	108	90	M22	ø24	G85

NOTE : 1. 상기 이외에 주문제작도 가능함.

2. 주문방법 /SHA-15 → O-RING GROOVE TYPE, BOLT HOLE TYPE  
SHE-15 → NONE O-RING GROOVE, TOP TYPE } SSA 및 SSB도 동일함.

## ELBOW FLANGE



O-RING GROOVE 상세도

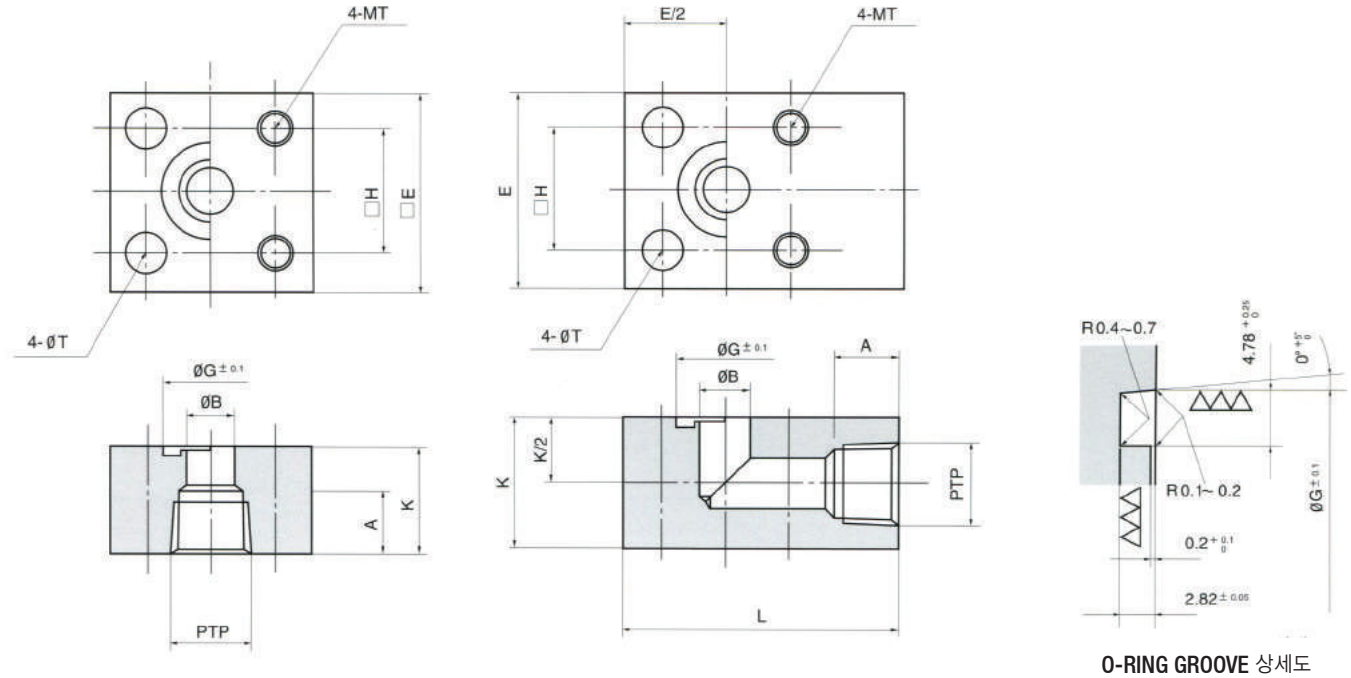
### ELBOW FLANGE - SOCKET WELD

형식	적용PIPE	E	L	H	D	C	K	P	B	A	R	O	G	T	O-RING KS-1B
LSA-15	21.7	54	63	36	20	40	40	22.2	16	11	5	32	30	Ø11	G25
LSA-20	27.2	58	70	40	22.5	45	45	27.7	20	12	5	38	35	Ø13	G30
LSA-25	34.0	68	82	48	25	50	50	34.5	25	14	5	45	40		G35
LSA-32	42.7	76	92	56	31.5	63	63	43.2	31.5	16	5	56	45		G40
LSA-40	48.6	92	110	65	35.5	71	71	49.1	37.5	18	5	63	55	Ø17.5	G50
LSA-50	60.5	100	125	73	42.5	85	85	61.1	47.5	20	5	75	65		G60
LSA-65	76.3	128	150	92	53	106	106	77.1	60	22	5	95	80	Ø20	G75
LSA-80	89.1	140	170	103	59	118	118	90.0	71	25	6	108	90	Ø24	G85

NOTE : 1. 상기 이외에 주문제작도 가능함.  
2. 주문방법 /LSA-15



## SQUARE & ELBOW FLANGE - THREAD TYPE



### SQUARE THREAD FLANGE - BSPT

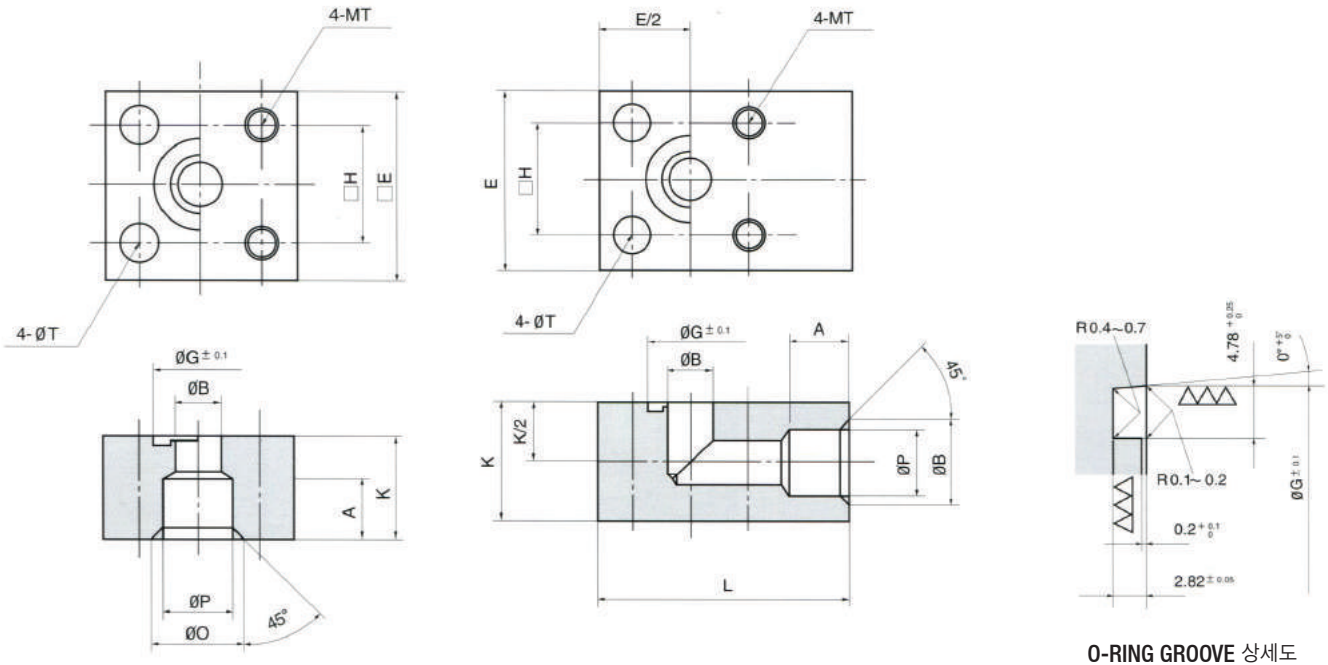
형 식	NORMAL SIZE		E	H	K	P	B	A	G	T	O-RING AS568
	FLANGE	PIPE									
SQ-15T	15A	21.7	58	36.6	32	1/2"	13	19	26.75	M10	-211
SQ-20T	20A	27.2	58	36.6	32	3/4"	19	19	31.52	ø11	-214
SQ-25T	25A	34.0	76	50.8	38	1"	25	19	39.45	M12	-219
SQ-32T	32A	42.7	76	50.8	38	1 1/4"	32	22	50.62	ø13.5	-222
SQ-40T	40A	48.6	102	69.8	45	1 1/2"	38	24	56.97	M16	-225
SQ-50T	50A	60.5	102	69.8	45	2"	51	30	66.50	ø17.5	-228
SQ-65T	65A	76.3	140	95.2	57	2 1/2"	63	30	82.37	M22	-232
SQ-80T	80A	89.1	140	95.2	57	3"	73	34	95.07	ø24	-237

### THREAD FLANGE - 90°BSPT

형 식	NORMAL SIZE		E	H	K	P	B	A	G	T	O-RING AS568	
	FLANGE	PIPE										
ST-15T	15A	21.7	58	80	36.6	38	1/2"	13	19	26.75	M10	-211
ST-20T	20A	27.2	58	80	36.6	36	3/4"	19	19	31.52	ø11	-214
ST-25T	25A	34.0	76	105	50.8	51	1"	25	25.5	39.45	M12	-219
ST-32T	32A	42.7	76	105	50.8	51	1 1/4"	32	25.5	50.62	ø13.5	-222
ST-40T	40A	48.6	102	130	69.8	76	1 1/2"	38	38	56.97	M16	-225
ST-50T	50A	60.5	102	130	69.8	76	2"	51	38	66.50	ø17.5	-228
ST-65T	65A	76.3	140	181	95.2	102	2 1/2"	63	51	82.37	M22	-232
ST-80T	80A	89.1	140	181	95.2	102	3"	73	51	95.07	ø24	-237

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /SQ-15T O → O-RING GROOVE : O, NONE GROOVE : N  
 3. 상기 이외에 주문제작도 가능함.

## SQUARE & ELBOW FLANGE - SOCKET WELD TYPE



O-RING GROOVE 상세도

### SQUARE SOCKET WELD FLANGE

형식	NORMAL SIZE		E	L	H	O	K	P	B	A	G	T	O-RING AS568
	FLANGE	PIPE											
SQ-15S	15A	21.7	58		36.6	30.2	18	22.2	13	13.5	26.75	M10	-211
SQ-20S	20A	27.2	58		36.6	35.7	18	27.7	19	13.5	31.52	Ø11	-214
SQ-25S	25A	34.0	76		50.8	42.5	25	34.5	25	16	39.45	M12	-219
SQ-32S	32A	42.7	76		50.8	51.2	25	43.2	32	16	50.62	Ø13.5	-222
SQ-40S	40A	48.6	102		69.8	61.2	31	49.2	38	22	56.97	M16	-225
SQ-50S	50A	60.5	102		69.8	73.1	31	61.1	51	22	66.50	Ø17.5	-228
SQ-65S	65A	76.3	140		95.2	89.1	38	77.1	63	27	82.37	M22	-232
SQ-80S	80A	89.1	140		95.2	102	38	90	73	27	95.07	Ø24	-237

### SOCKET WELD FLANGE - 90°

형식	NORMAL SIZE		E	L	H	O	K	P	B	A	G	T	O-RING AS568
	FLANGE	PIPE											
SL-15S	15A	21.7	58	80	36.6	30.2	38	22.2	13	13.5	26.75	M10	-211
SL-20S	20A	27.2	58	80	36.6	35.7	42	27.7	19	13.5	31.52	Ø11	-214
SL-25S	25A	34.0	76	105	50.8	42.5	51	34.5	25	16	39.45	M12	-219
SL-32S	32A	42.7	76	105	50.8	51.2	59	43.2	32	16	50.62	Ø13.5	-222
SL-40S	40A	48.6	102	130	69.8	61.2	76	49.2	38	22	56.97	M16	-225
SL-50S	50A	60.5	102	130	69.8	73.1	76	61.1	51	22	66.50	Ø17.5	-228
SL-65S	65A	76.3	140	181	95.2	89.1	102	77.1	63	27	82.37	M22	-232
SL-80S	80A	89.1	140	181	95.2	102	124	90	73	27	95.07	Ø24	-237

- NOTE : 1. T는 O-RING GROOVE가 있는 경우 DRILL HOLE가공을, O-RING GROOVE가 없을 경우 TAP가공을 원칙으로 함.  
 2. 주문방법 /SL-15S O → O-RING GROOVE : O, NONE GROOVE : N  
 3. 상기 이외에 주문제작도 가능함.